74535491-9452475B
ATTACHMENT 53
Page 1 of 29

VOLATILE ORGANIC DATA VALIDATION SUMMARY FOR DATA PACKAGE: B09332-TMA-611 (923-E418, Filename B09332.VOA)





TO: 200-UP-2 Project QA Record

April 20, 1994

FR: Susan Winter, Golder Associates Inc.

RE: VOLATILE ORGANIC DATA VALIDATION SUMMARY FOR DATA PACKAGE:

B09332-TMA-611 (923-E418, Filename B09332.VOA)

INTRODUCTION

This memo presents the results of data validation on data package B09332-TMA-611 prepared by the Thermo Analytical (TMA) laboratory. A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

SAMPLE ID	SAMPLE DATE	MEDIA	ANALYSIS
B09332	09/09/93	SOIL	SEE NOTE 1
B09333	09/10/93	SOIL	
B09335	09/09/93	SOIL	
B09336	09/10/93	SOIL	

Data validation was conducted in accordance with the WHC statement of work (WHC 1993a) and validation procedures (WHC 1993b). Attachments 1 through 5 provide the following information as indicated below:

Attachment 1. Glossary of Data Reporting Qualifiers

Attachment 2. Summary of Data Qualifications

Attachment 3. Qualified Data Summary and Annotated Laboratory Reports

Attachment 4. Laboratory Narrative and Chain-of-Custody Documentation

Attachment 5. Data Validation Supporting Documentation

DATA QUALITY OBJECTIVES

This section presents a summary of the data quality in terms of the referenced validation criteria.

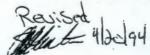
Precision. Goals for precision were met.

Accuracy. Goals for accuracy were met.

Sample Result Verification. All sample results were supported in the raw data.

Detection Limits. Detection limit goals were met for all sample results as specified in the reference analytical method.

Completeness. The data package was complete for all requested analyses. A total of four samples were validated in this data package with a total of 132 determinations reported, all of



which were deemed valid. This results in a completeness of 100 percent, which meets normal work plan objectives of 90%.

Sample B09335 was identified as a solid trip blank in which all results were verified as nondetects with the exception tentatively identified compound (TIC) labeled as an unknown hydrocarbon at a retention time of 27.50 minutes and at a concentration of 8 μ g/kg. This sample, B09335, is the only sample in this data package in which a TIC was detected.

MAJOR DEFICIENCIES

No major deficiencies were identified during data validation which required qualification of data as unusable.

MINOR DEFICIENCIES

The following minor deficiencies were identified during data validation which required qualification of data.

Laboratory Blanks

 Methylene chloride and acetone were present in the associated laboratory blank. Attachments 2 and 5 provide a summary of the affected samples, data qualifications applied and supporting documentation.

REFERENCES

WHC 1993a, Validation of 200-UP-2 Data, Statement of Work, Analytical Laboratory Data Validation, Task Order S-94-18, December 14, 1993, Purchase Order M073750. Westinghouse Hanford Company, Richland, Washington.

WHC 1993b, Data Validation Procedures for Chemical Analyses, WHC-SD-EN-SPP-002, Rev. 2, 1993. Westinghouse Hanford Company, Richland, Washington.

Revised 4/20/94

ATTACHMENT 1 GLOSSARY OF DATA REPORTING QUALIFIERS

GLOSSARY OF ORGANIC DATA REPORTING QUALIFIERS

- B Indicates the constituent was analyzed for and detected in the associated laboratory blank. This qualifier is applied by the laboratory. During the process of data validation this qualifier may be replaced by other appropriate qualifiers as defined by the validation procedures. The associated data should be considered usable for decision making purposes.
- U Indicates the constituent was analyzed for and not detected. The concentration reported is the sample quantitation limit corrected for aliquot size, dilution and percent solids (in the case of solid matrices) by the laboratory. The associated data should be considered usable for decision making purposes.
- UJ Indicates the constituent was analyzed for and not detected. Due to a minor quality control deficiency identified during data validation the concentration reported may not accurately reflect the sample quantitation limit. The associated data should be considered usable for decision making purposes.
- J Indicates the constituent was analyzed for and detected. This qualifier may be applied by the laboratory to indicate a concentration which is less than the contract required quantitation limit (CRQL) but greater than the instrument detection limit (IDL). During data validation this qualifier may be applied to indicate a minor quality control deficiency. However in either case, the associated data should be considered usable for decision making purposes.
- NJ Indicates presumptive evidence of a constituent at an estimated value. This qualifier is normally applied to GC analysis data (such as organochlorine pesticide and PCB data). The associated data should be considered usable for decision making purposes.
- N Indicates presumptive evidence of a constituent. This qualifier is normally applied to GC analysis data (such as organochlorine pesticide and PCB data). The associated data should be considered usable for decision making purposes.
- JN Indicates a tentatively identified compound (TIC) whose concentration and identification have been determined to be valid as a result of data validation. The associated data should be considered usable for decision making purposes.
- UR Indicates the constituent was analyzed for and not detected. The concentration reported has been qualified as unusable due to a major quality control deficiency identified during data validation. The associated data should be considered unusable for decision making purposes.
- R Indicates the constituent was analyzed for and detected. The concentration reported has been qualified as unusable due to a major quality control deficiency identified during data validation. The associated data should be considered unusable for decision making purposes.

ATTACHMENT 2 SUMMARY OF DATA QUALIFICATIONS

DATA QUALIFICATION SUMMARY

SDG: B09332-TMA-611	VALIDAT	DATE: March 4, 1994	PAGE 1 OF 1
COMMENTS: VOLATILE ORGAN	VICS T		
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
ACETONE	U	B09332 B09333 B09336	PRESENT IN LABORATORY BLANK
UNKNOWN HYDROCARBON @ RT 27.5 MINUTES	JN	B09335	IDENTIFIED AS A VALID RESULT USING DATA VALIDATION PROCEDURES
	-		
			·
• · · · · · · · · · · · · · · · · · · ·			

ATTACHMENT 3 QUALIFIED DATA SUMMARY AND ANNOTATED LABORATORY REPORTS

Validated Data Summary, Data Package: B09332-TMA-611

	Samp# B09332 Date 9-9-93 Location 299-W19-95 Type 60.00 - 62.50 Type		.50	809333 9-10-93 299-W19-97 50.00 - 52.50		B09335 9-9-93 299-W19-97 TRIP BLANK		809336 9-10-93 299-W19-95 74.80 - 77.30	
Parameter	Units	Result	0	Result	Q	Result	Q	Resul t	Q
CHLOROMETHANE	UG/KG	11.000	U	12.000	U	10.000	U	10.000	1
BROMOMETHANE	UG/KG	11.000	U	12.000	U	10.000	U	10.000	
VINYL CHLORIDE	UG/KG	11.000	U	12.000	U	10.000	U	10.000	- 1
CHLOROETHANE	UG/KG	11.000	U	12.000	U	10.000	U	10,000	-
METHYLENE CHLORIDE	UG/KG	11.000	U	12.000	U	10.000	U	10.000	
ACETONE	UG/KG	11.000	U	12,000	U	10.000	U	10,000	7
CARBON DISULFIDE	UG/KG	11.000	U	12.000	U	10.000	U	10,000	-
1.1-DICHLOROETHENE	UG/KG	11.000	U	12.000	U	10.000	U	10,000	-
1,1-DICHLOROETHANE	UG/KG	11.000	U	12,000	u	10.000	U	10,000	
1,2-DICHLOROETHENE (TOTAL)	UG/KG	11.000	U	12.000	U	10.000	U	10.000	
CHLOROFORM	UG/KG	11.000	U	12,000	U	10.000	U	10,000	•
1,2-DICHLOROETHANE	UG/KG	11.000	U	12,000	U	10.000	U	10.000	
2-BUTANONE	UG/KG	11.000	U	12.000	U	10.000	U	10,000	
1,1,1-TRICHLOROETHANE	UG/KG	11.000	u l	12.000	U	10,000	· U	10.000	
CARBON TETRACHLORIDE	UG/KG	11.000	U	12,000	U	10.000	U	10,000	
BROMODICHLOROMETHANE	UG/KG	11.000	υl	12.000	Ü	10.000	U	10.000	
1,2-DICHLOROPROPANE	UG/KG	11.000	U	12.000	U	10.000	U	10.000	
CIS-1,3-DICHLOROPROPENE	UG/KG	11.000	U	12.000	U	10.000	U	10.000	
TRICHLOROETHENE	UG/KG	11,000	U	12.000	U	10,000	U	10,000	
DIBROMOCHLOROMETHANE	UG/KG	11.000	U	12.000	υl	10.000	U	10.000	
1,1,2-TRICHLOROETHANE	UG/KG	11.000	U	12,000	U	10,000	U	10.000	
BENZENE	UG/KG	11.000	U	12,000	U	10.000	U	10.000	
TRANS-1.3-DICHLOROPROPENE	UG/KG	11.000	U	12,000	U	10.000	U	10,000	
BROMOFORM	UG/KG	11.000	U	12,000	U	10,000	U	10.000	
4-METHYL-2-PENTANONE	UG/KG	11.000	U	12,000	υl	10.000	U	10,000	
2-HEXANONE	UG/KG	11.000	U	12.000	U	10.000	Ü	10,000	
TETRACHL OROETHENE	UG/KG	11.000	U	12.000	U	10.000	U	10.000	
1,1,2,2-TETRACHLOROETHANE	UG/KG	11.000	U	12,000	U	10.000	U	10.000	
TOLUENE	UG/KG	11.000	Ū	12.000	U	10.000	U	10,000	
CHLOROBENZENE	UG/KG	11.000	U	12.000	U	10.000	Ü	10,000	
ETHYLBENZENE	UG/KG	11.000	U	12.000	U	10.000	U	10,000	•
STYRENE	UG/KG	11.000	U	12,000	U	10.000	U	10,000	
XYLENES (TOTAL)	UG/KG	11.000	ŭ	12,000	u	10.000	u	10,000	

Milato 303/94

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO. 749-1.119-95

VOLLITZE ONGINIZED INVITZEDED	211 <u>211 1.3</u>
Lab Name: TMA/ARLI	Contract: WHC B09332
Lab Code: TMALA Case No.: 09028	SAS No.: NA SDG No.: NA
Matrix: (soil/water) SOIL	Lab Sample ID: A309028-01A
Sample wt/vol: 5.0 (g/mL) G	Lab File ID: 30916R15
Level: (low/med) LOW	Date Received: 09/14/93
% Moisture: not dec. 6	Date Analyzed: 09/16/93
GC Column: PACK ID: 2.00 (mm)	Dilution Factor: 1.0
Soil Extract Volume: (uL)	Soil Aliquot Volume:(uL)
CAS NO. COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG Q
74-87-3Chloromethane 74-83-9Bromomethane 75-01-4Vinyl Chloride 75-00-3Chloroethane 75-09-2Methylene Chlor 67-64-1Carbon Disulfid 75-35-41,1-Dichloroeth	11 U U

11 IU 540-59-0----1,2-Dichloroethene (total) 67-66-3-----Chloroform 11 IU 107-06-2----1, 2-Dichloroethane 11 IU 78-93-3----2-Butanone 11 U 71-55-6----1,1,1-Trichloroethane 11 U 56-23-5-----Carbon Tetrachloride 11 U 75-27-4-----Bromodichloromethane 11 U 78-87-5----1, 2-Dichloropropane 11 U 10061-01-5----cis-1,3-Dichloropropene 11 U 79-01-6----Trichloroethene 11 -U 124-48-1-----Dibromochloromethane 11 U 79-00-5----1,1,2-Trichloroethane 11 U 71-43-2----Benzene 11 U 10061-02-6----trans-1,3-Dichloropropene 11 U 75-25-2-----Bromoform 11 U 108-10-1----4-Methyl-2-Pentanone 11 U 591-78-6----2-Hexanone 11 U 127-18-4-----Tetrachloroethene 11 U 11 79-34-5----1,1,2,2-Tetrachloroethane U 108-88-3-----Toluene 11 U 108-90-7-----Chlorobenzene 11 U 100-41-4----Ethylbenzene 11 U 1008 100-42-5-----Styrene 11 U 1330-20-7-----Xylene (total)

Wee Sied 3/2/94 FORM I VOA

3/90

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B09332

Lab Name: TMA/ARLI		Contract	WHC	1.	60-6	3.2.
Lab Code: TMALA	Case No.: 09028	SAS No.:	NA	SDG 1	No.: NA	
Matrix: (soil/water)	SOIL		Lab Sample	e ID:	A309028	3-01A
Sample wt/vol:	5.0 (g/mL) G	_	Lab File	ID:	30916R	15
Level: (low/med)	LOW		Date Rece	ived:	09/14/9	93
% Moisture: not dec	6	•	Date Analy	yzed:	09/16/9	93
GC Column: PACK	ID: (mm)		Dilution 1	Factor	:	1.0
Soil Extract Volume	:(uL)		Soil Aliqu	uot Vo	lume: _	(uL)
Number TICs found:		CONCENT (ug/L	TRATION UNI	ITS: UG/KG		
CAS NUMBER	COMPOUND NA		RT		CONC.	Q
			i r			1

010

FORM I VOA-TIC Verification 3/90

1A VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B09333

Lab	Name:	TMA/ARLI	Contract:	WHC	50-52.51

Lab Code: TMALA Case No.: 09028 SAS No.: NA SDG No.: NA

Matrix: (soil/water) SOIL Lab Sample ID: A309028-02A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 30916R12

Level: (low/med) LOW Date Received: 09/14/93

% Moisture: not dec. 17 Date Analyzed: 09/16/93

GC Column: PACK ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: ____(uL) Soil Aliquot Volume: ____(uL)

CAS NO.	COMPOUND	CONCENTRATI	ION UNITS: g/Kg) <u>UG/KG</u>		Q	9
	Chloromethane		_	12 1		
75-01-4	Vinyl Chloride	9	_i :	12	J	1
	Chloroethane Methylene Chlo	rida		12 [
	Acetone	or rae	_ •		3	iu
	Carbon Disulfi	de	-	12		
	1,1-Dichloroet		_ '	12 1		1
	1,1-Dichloroet		- '	12		i
	1,2-Dichloroet			12		i
67-66-3	Chloroform	,	_ '	12		i
	1,2-Dichloroet	hane	-i	12	J	į ·
	2-Butanone			12 1	J	İ
71-55-6	1,1,1-Trichlor	roethane		12	J	
56-23-5	Carbon Tetrach	nloride		12	J	1
	Bromodichloron		-	12	J	1
	1,2-Dichloropa		and the same of th	12 1	J	1
	cis-1,3-Dichlo			12	J	
	Trichloroether		_ '	12 - 11	J	1
	Dibromochloron			12 1		{
	1,1,2-Trichlor	roethane		12		1
	Benzene			12		-
	trans-1,3-Dich	nloropropene	_ •	12		
	Bromoform		-	12		
	4-Methyl-2-Per	ntanone	_ '	12		i
	2-Hexanone		<u> </u>	12		1
	Tetrachloroeth		_ '	12		!
	1,1,2,2-Tetra	cnioroethane	-	12 [1
	Toluene Chlorobenzene			12		
			_ 1	12		
	Ethylbenzene		_ '	12 [-011
	Styrene		_'	12 T	7	011
1330-20-/	Xylene (total)		-	12	,	1
			_			. 1

FORM I VOA

Westerd 3294

3/90

VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

= 000102 EPA SAMPLE NO. 299-6-97

Lab Name: TMA/ARLI	Contract: WHC 500533	3
Lab Code: TMALA Case No.:	09028 SAS No.: NA SDG No.: NA	
Matrix: (soil/water) SOIL	Lab Sample ID: A30902	8-02A
Sample wt/vol: 5.0 (g/	/mL) G Lab File ID: 30916R	12
Level: (low/med) LOW	Date Received: 09/14/	93
% Moisture: not dec. 17	Date Analyzed: 09/16/	93
GC Column: PACK ID: 2.	.00 (mm) Dilution Factor:	1.0
Soil Extract Volume:	(uL) Soil Aliquot Volume: _	(uL)
Number TICs found:0	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	
CAS NUMBER COME	POUND NAME RT EST. CONC.	Q

012

FORM I VOA-TIC

Verisited 3/90

1A VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

Tab Names MW2 (ADTT	B09335
Lab Name: TMA/ARLI	contract: WHC Stid Top Blank
Lab Code: TMALA Case No.: 09028	SAS No.: NA SDG No.: NA
Matrix: (soil/water) SOIL	Lab Sample ID: A309028-04A
Sample wt/vol: 5.0 (g/mL) G	Lab File ID: <u>30916R14</u>
Level: (low/med) LOW	Date Received: 09/14/93
% Moisture: not dec. 0	Date Analyzed: 09/16/93
GC Column: PACK ID: 2.00 (mm)	Dilution Factor: 1.0
Soil Extract Volume: (uL)	Soil Aliquot Volume:(uL)
	CONCENTRATION UNITS:
CAS NO. COMPOUND	(ug/L or ug/Kg) UG/KG Q
74-87-3Chloromethane	10 U
74-83-9Bromomethane	10 U
75-01-4Vinyl Chloride	10 U
75-00-3Chloroethane	10 U
75-09-2Methylene Chlo	
67-64-1Acetone	10 0
75-15-0Carbon Disulfi	
75-15-0	de 10 U
75-35-41,1-Dichloroet	thene 10 U
75-34-31,1-Dichloroet	thane 10 U
540-59-01,2-Dichloroet	
67-66-3Chloroform	10 U
107-06-21,2-Dichloroet	
78-93-32-Butanone	10 U
71-55-61,1,1-Trichlor	coethane 10 U
56-23-5Carbon Tetrach	nloride 10 U
75-27-4Bromodichlorom	methane 10 U
78-87-51,2-Dichloropr	copane 10 U
10061-01-5cis-1,3-Dichlo	propropene 10 U
79-01-6Trichloroethen	10 U
124-48-1Dibromochlorom	methane 10 U
79-00-51,1,2-Trichlor	
71-43-2Benzene	10 U
10061-02-6trans-1,3-Dich	
75-25-2Bromoform	10 U
108-10-14-Methyl-2-Pen	
591-78-62-Hexanone	10 U
127-18-4Tetrachloroeth	
79-34-51,1,2,2-Tetrac	
108-88-3Toluene	10 U
108-90-7Chlorobenzene	
100-41-4Ethylbenzene	10 U
100-42-5Styrene	10 U 013
1330-20-7Xylene (total)	10 U

Versied
Sillate 3/194 FORM I VOA

3/90

1E VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE	NO.
299-4-19-6	Fi

B09335

	Lab Name: TMA/ARL		Contract	WHC	- <i>D</i>	tid To	ig R	LIKE
	Lab Code: TMALA	Case No.: 09028	SAS No.	NA	SDG No	o.: NA		
	Matrix: (soil/wate	er) SOIL		Lab Sample	ID: 2	1309028	-04A	
	Sample wt/vol:		_	Lab File I	D:	30916R1	4	
	Level: (low/med	i) LOW		Date Recei	ved:	09/14/9	3	
	% Moisture: not de	ec. <u>0</u>		Date Analy	zed:	09/16/9	3	
	GC Column: PACK	ID: (mm)		Dilution F	actor:	1	.0	
		me: (uL)		Soil Aliqu	ot Volu	ume:	(uI	(د
1517	Number TICs found	d: <u>1</u>		ration uni or ug/kg) <u>u</u>				
3225	CAS NUMBER	COMPOUND NA		RT			Q	
3	1.	UNKNOWN HYDROCARBON		27.50			3-	24
- Added								_

014

FORM I VOA-TIC

Verified
State 3/2/94 3/90

VOLATILE ORGANICS ANALYSIS DATA SHEET

B09336

Lab	ab Name: TMA/ARLI				Contr	cact:	WHC	74.8-77				
Lab	Code:	TMALA	Case	No.:	09028	SAS	No.:	NA	SDG	No.:	NA	

Matrix: (soil/water) SOIL Lab Sample ID: A309028-03A

Lab File ID: 30916R13 Sample wt/vol: 5.0 (g/mL) G

Level: (low/med) LOW Date Received: 09/14/93

% Moisture: not dec. __3 Date Analyzed: 09/16/93

GC Column: PACK ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: ____ (uL) Soil Aliquot Volume: ____(uL)

CAS NO.	COMPOUND	(ug/L or ug/		Q	Q
74-87-3	Chloromethane		10	U	
	Bromomethane		10	Ū	
75-01-4	Vinyl Chloride	e	10	U	ì
	Chloroethane		10	U	i
	Methylene Chlo	oride	10	U	i .
67-64-1			10 3	•	iu
	Carbon Disulf:	ide	10	U	
75-35-4	1, 1-Dichloroe	thene	10	U	i
75-34-3	l, l-Dichloroe	thane	10	U	i
	1, 2-Dichloroe		10	U	i
	Chloroform	· · · · · · · · · · · · · · · · · · ·	10	U	i
107-06-2	1, 2-Dichloroe	thane	10	U	i
78-93-3	2-Butanone		10	U	i
71-55-6	1, 1, 1-Trichlo	roethane	10	U	1
	Carbon Tetrac		10	U	1
75-27-4	Bromodichloro	methane	10	U	i
78-87-5	1, 2-Dichlorop	ropane	10	U	1
10061-01-5	cis-1,3-Dichle	oropropene	10	U	
	Trichloroether		10 -	U	i
	Dibromochloro		10	U	1
79-00-5	1,1,2-Trichlo	roethane	10	U	1
71-43-2			10	U	1 -
10061-02-6	trans-1,3-Dic	hloropropene	10	U	1
	Bromoform		10	U	-
108-10-1	4-Methyl-2-Per	ntanone	10	U	i
	2-Hexanone		10	U	1
	Tetrachloroet		10	U	1
	1,1,2,2-Tetra	chloroethane	10	U	1
	Toluene		10	In .	1
108-90-7	Chlorobenzene		10	U	1
100-41-4	Ethylbenzene		10	U	1
	Styrene		10	U	015
1330-20-7	Xylene (total)	10	U	1

3/90

FORM I VOA Verseed

Spelliet 3/2/94

4325.1519

VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE 1	10.
B09336	123

Lab Name: TMA/ARLI	Contract: WHC 174.8-7.7 77
	SAS No.: NA SDG No.: NA S31245
Matrix: (soil/water) SOIL	
Sample wt/vol: 5.0 (g/mL) G	Lab File ID: 30916R13
Level: (low/med) LOW	Date Received: 09/14/93
% Moisture: not dec3	Date Analyzed: 09/16/93
GC Column: PACK ID: 2.00 (mm)	Dilution Factor: 1.0
Soil Extract Volume: (uL)	Soil Aliquot Volume:(uL)
Number TICs found:0	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG
CAS NUMBER COMPOUND NA	ME RT EST. CONC. Q

016

FORM I VOA-TIC Verified

State 3294

3/90

ATTACHMENT 4 LABORATORY NARRATIVE AND CHAIN-OF-CUSTODY DOCUMENTATION



CASE NARRATIVE

LABORATORY : TMA/ARLI

CASE : 09-028

CONTRACT ID : WESTINGHOUSE HANFORD COMPANY

SDG RECEIPT DATE: September 14, 1993

1.0 DESCRIPTION OF CASE :

Four soil samples were analyzed for TCL Organics- Volatiles and Semivolatiles according to the USEPA Contract Laboratory Program (CLP) Statement of Work for Organic Analysis, Revision OLM01.8. The Extractable Hydrocarbons in the Kerosene Range (K) were analyzed according to the SW-846 Method 8015M.

2.0 SAMPLE LIST :

			ANALYSIS	
WESTING	GHOUSE ID	LAB ID	REQUESTED	MATRIX
B09332		A3-09-028-01A	V	SOIL
B09332	MS	A3-09-028-01B	V	SOIL
B09332	MSD	A3-09-028-01C	V	SOIL
B09332		A3-09-028-01D	SV	SOIL
B09332		A3-09-028-01G	K	SOIL
B09333		A3-09-028-02A	V	SOIL
B09333		A3-09-028-02B	SV	SOIL
B09333	MS	A3-09-028-02C	SV	SOIL
B09333	MSD	A3-09-028-02D	sv	SOIL
B09333		A3-09-028-02G	K	SOIL
B09336		A3-09-028-03A	V	SOIL
B09336		A3-09-028-03B	sv	SOIL
B09336		A3-09-028-03D	K	SOIL
B09336	MS	A3-09-028-03E	K	SOIL
B09336	MSD	A3-09-028-03F	K	SOIL
B09335		A3-09-028-04A	V .	SOIL

3.0 COMMENTS:

3.1 SHIPPING AND DOCUMENTATION :

All of the samples were received intact and properly documented.

3.2 ANALYSIS

3.2.1 VOLATILE ANALYSIS COMMENTS :

LOW LEVEL SOIL :

The samples were analyzed by heated purge within the CLP SOW holding times.

All of the QC results were within the limits specified by the EPA CLP SOW.

TUNES :

All BFB tunes were injected directly into the GC/MS instrument.

3.2.2 SEMIVOLATILE ANALYSIS COMMENTS :

LOW LEVEL SOIL :

The samples were extracted and analyzed within the CLP SOW holding times. Phenol was detected in sample B09336 at a concentration that was below the CRQL.

The matrix spike recovery of 2,4-Dinitrotoluene in sample B09333MS was slightly above the QC limits. In accordance with the protocol, no further action was required.

All of the other QC results were within the limits specified by the EPA CLP SOW.

3.2.3 EXTRACTABLE HYDROCARBONS "KEROSENE RANGE" COMMENTS :

SEQUENCE NOTES :

The sequence was started on 09/16/93 and was analyzed according to the SW-846 Method 8015M. The initial calibration consisted of 5 different levels of the Kerosene standard that ranged from 200ppm to 2000ppm. The continuing calibration at the 1000ppm level was injected amongst a series of samples, in order to verify the instrument stability. The %RSD in the initial calibration and the %D in the continuing calibration were below their 20% and 15% limits, respectively.

SAMPLE NOTES :

LOW LEVEL SOIL :

The samples were extracted and analyzed for extractable hydrocarbons in the Kerosene range within the required holding times. Approximately 20 g of each sample was extracted and concentrated to 5 mL.

There were no hydrocarbons detected in any of the samples. Sample B09336 was spiked with Kerosene and the matrix spike recoveries were 85% and 93%. A blank spike was prepared at the same time, and had an 79% recovery.

All of the QC results were within the limits specified by the SW-846 Method 8015M.

We certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data in this hardcopy data package and in the computer-readable data submitted on diskette is authorized by the Laboratory Manager or his designee, as verified by the following signatures.

Nicole Roth

11/29/93

CLP Program Manager

Maureen Parrish 11/29/93

Project Manager

Westingl	iouse
Hanford	Company

CHAIN OF CUSTODY

Custody Form Initiator L E ROGERS		
Company Contact L E ROGERS	Telep	hone 376-7690
Project Designation/Sampling Locations	200-UP-2 colle	ction Date 9-9-93
Ice Chest No. 5ML 366	Field	Logbook No. EFL-1091
Bill of Lading/Airbill No.	Offsi	te Property No.
Method of Shipment OVERNIGHT AIR	SERVICE	the state of the s
Shipped to TMA		
	samples at 4C (SOIL) NOW	E DETECTABLE
	Sample Identification	
1) J.250ml P:CLP; TAL Hetals, Hg, Ti	809332	
120ml 4.250mL GS: VOA CLP		
1,250ml nG:Semi-VOA CLP 1,125ml G:Anions F,Cl,SO4 (EPA)	300.0)	
TETESMI P/G:Anions HOZ, HO3 (EPA 3		•
1,125ml G:Cyanide CLP Gu:Kerosene (8015M)		
1,1000ml P/G:Gross alpha/beta (EP-	10), Gamma Spec to include,Cs-134,Cs-137, ,Na-22 (RC-30), Total Uranium (EA-01C) U-	Co-60,Eu-152, 235 (1-234 (1-238 (ED-70 ED-71 ED-5) No-
237, (RC-101A, RC-622, EP-	5) ru-238,ru-239/240 (EP-80, EP-81, EP-5)	1-129 (RC-25, RC-605) Sr-90 (RC-306, RC-
G:Cynnide CLP Gu:Kerosene (8015H) 1,1000ml P/G:Gross alpha/beta (EP- Eu-154,Eu-155,K-40,Ru-106 237,(RC-101A, RC-622, EP- 303, RC-309, RC-304) Tc-9	9 (RC-24, RC-604) Am-241,Cm-244 (EP-80, E	P-90, EP-91, EP-92, EP-93, EP-5) Se-79
2)	709334 B09335	•
120ml -1,250ml GS: VOA CLP	1800	
1 125ml ac-Somi-Von CEP	9-10-93	
1,125ml P/G:Anione HOZ HO3 (EPA 3	53.27	
1,125ml Greyonide CLP		
1,1000ml P/G:Gross alpha/beta (EP	10), Samuel Spec to include, Co-134, Co-137,	Go 69, Eu 152,
Eu-154, Eu-155, K-40, Ra-106	, NA-22 (RC-30), local Uranium (EA-UIC) U-	235.U-234.U-238 (EP-70, EP-71, EP-5) NO
337 (RC 1014 RC 637 FP	5) Pu 238 Pu 239/240 (FP-80 FP-81 FP-5)	1-129 IRC-25 RC-(05) 31-90 IRC-20/ PC-
-303, RC 309, RC 384) Ic-C	5) Pu 238, Pu 239/240 (EP-80, EP-81, EP-5) 7 (EC-26, EC-606) Am-241, Em-244 (EP-80, E	1-129 (RC-25, RC-605) 91-90 (RC-306, RC-
-303, RC 309, RC 384) Te-9	5) - Pu-238, Pu-239/240 (EP-80, EP-81, EP-5)	1-129 (RC-25, RC-605) 91-90 (RC-306, RC-
3) 1,250ml P:CLP; TAL Metals, Ng, Ti	5) - Pu-238, Pu-239/240 (EP-80, EP-81, EP-5)	1-129 (RC-25, RC-605) 91-90 (RC-306, RC-
3) 1,250ml P:CLP; TAL Hetals, Ng, Ti 1,250ml GS: VOA CLP	5) - Pu-238, Pu-239/240 (EP-80, EP-81, EP-5)	1-129 (RC-25, RC-605) 91-90 (RC-306, RC
3) 1,250ml P:CLP;TAL Hetals, llg, Ti 1,250ml GS:VOA CLP 1,250ml aG:Semi-VOA CLP 1,125ml G:Anions F,Cl,SO4 (EPA	5) Pu-238, Pu-239/240 (EP-80, EP-81, EP-5) 9 (EC-24, RC-604) Am-241, Em-244 (EP-80, E	1-129 (RC-25, RC-605) 91-90 (RC-306, RC
3) 1,250ml P:CLP;TAL Hetals, IIg, Ti 1,250ml Gs:VOA CLP 1,250ml aG:Semi-VOA CLP 1,125ml G:Anions F,Cl, SO4 (EPA 1,125ml P/G:Anions NO2, NO3 (EPA 3	5) Pu-238, Pu-239/240 (EP-80, EP-81, EP-5) 9 (EC-24, RC-604) Am-241, Em-244 (EP-80, E	1-129 (RC-25, RC-605) 91-90 (RC-306, RC
3) 1,250ml P:CLP;TAL Hetals, llg, Ti 1,250ml Gs. VOA CLP 1,250ml G:Semi-VOA CLP 1,125ml G:Semi-VOA CLP 1,125ml G:Anions F,Cl, SO4 (EPA 3 1,125ml G:Cyanide CLP 1,125ml Gw:Kerosene (8015M)	5) Pu-238, Pu-239/240 (EP-80, EP-81, EP-5) 9 (PC-24, PC-604) Am-241, Em-244 (EP-80, E	1-129 (RC-25, RC-605) 31-90 (RC-306, RC-706, R
3) 1,250ml P:CLP;TAL Hetals, Hg, Ti 1,250ml Gs:VOA CLP 1,250ml G:Semi-VOA CLP 1,125ml G:Anions FCl, SO4 (EPA 1,125ml P/G:Anions NO2, NO3 (EPA 3 1,125ml G:Cyanide CLP	5) Pu-238, Pu-239/240 (EP-80, EP-81, EP-5) 9 (PC-24, PC-604) Am-241, Em-244 (EP-80, E	1-129 (RC-25, RC-605) 31-90 (RC-306, RC-70-70, EV-91, EV-92, EV-93, EV-3) 30-79
3) 1,250ml P:CLP; TAL Metals, Ng, Ti 1,250ml Gs:VOA CLP 1,250ml aG:Semi-VOA CLP 1,125ml G:Anions F,Cl, SO4 (EPA 1,125ml P/G:Anions NO2, NO3 (EPA 3 1,125ml G:Cyanide CLP 237.(RC-101A, RC-622, EP-	5) Pu-238, Pu-239/240 (EP-80, EP-81, EP-5) P (RC-24, RC-604) Am-241, Em-244 (EP-80, Em-244) 300.0) 53.2) 10), Gamma Spec to include, Cs-134, Cs-137, Na-22 (RC-30), Total Uranium (EA-01C) U-5) Pu-236, Pu-237/240 (EP-80, EP-81, EP-5)	Co-60, EU-452, 235, U-238 (EP-ZD, EP-71, EP-5) Np-1-129 (RC-25, RC-605) Sr-99 (RC-306, RC-605) Sr-99 (RC-306, RC-306,
3) 1,250ml P:CLP; TAL Hetals, Hg, Ti 1,250ml Gs. VOA CLP 1,250ml G:Anions F, Cl, SO4 (EPA 1,125ml G:Anions NO2, NO3 (EPA 3 1,125ml G:Cyanide CLP 1,125ml Gw:Kerosene (8015M) 1,1000ml P/G:Gross alpha/beta (EP-Eu-154, Eu-155, K-40, Ru-106 237, (RC-101A, RC-622, EP-303, RC-309, RC-304) Te-9	5) Pu-238, Pu-239/240 (EP-80, EP-81, EP-5) 9 (PC-24, PC-604) Am-241, Em-244 (EP-80, EP-81) 300.0) 53.2) 10), Gamma Spec to include, Cs-134, Cs-137, Na-22 (RC-30), Total Uranium (EA-01C) U-5) Pu-238, Pu-239/240 (EP-80, EP-81, EP-5) 9 (RC-24, RC-604) Am-241, Cm-244 (EP-80, EP-80)	CO-60, EU-152, 235, U-236, U-236, RC-306, RC-3
3) 1,250ml P:CLP;TAL Hetals, Hg, Ti T,250ml G:Semi-VOA CLP 1,250ml G:Anions F,Cl, SO4 (EPA 1,125ml G:Anions NO2, NO3 (EPA 3 1,125ml G:Cyanide CLP 1,125ml G:Kerosene (8015M) 1,1000ml P/G:Gross alpha/beta (EP-Eu-154, Eu-155, K-40, Ru-106 237, (RC-101A, RC-622, EP-303, RC-309, RC-304) Tc-9	300.0) 10), Gamma Spec to include, Cs-134, Cs-137, Na-22 (RC-30), Total Uranium (EA-01C) U-5) ru-238, Pu-239/240 (EP-80, EP-81, EP-5) (RC-24, RC-604) Am-241, Cm-244 (EP-80, EP-80, EP-	Co-60, EU-152, 235, U-238 (EP-70, EP-71, EP-5) Np-1-129 (RC-306, RC-306, RC-30
3) 1,250ml P:CLP; TAL Hetals, lig, Ti 1,250ml Gs.VOA CLP 1,250ml GS.VOA CLP 1,250ml G:Anions F.Cl, SO4 (EPA 1,125ml P/G:Anions NO2, NO3 (EPA 3 1,125ml G:Cyanide CLP 1,125ml Gw:Kerosene (8015M) 1,1000ml P/G:Gross alpha/beta (EP- Eu-154, Eu-155, K-40, Ru-106 237, (RC-101A, RC-622, EP- 303, RC-309, RC-304) Tc-9 [] Field Transfer of Custody Rolinquished Oy: 1040	5) Pu-238, Pu-239/240 (EP-80, EP-81, EP-5) 9 (PC-24, PC-604) Am-241, Em-244 (EP-80, EP-81) 300.0) 53.2) 10), Gamma Spec to include, Cs-134, Cs-137, Na-22 (RC-30), Total Uranium (EA-01C) U-5) Pu-238, Pu-239/240 (EP-80, EP-81, EP-5) 9 (RC-24, RC-604) Am-241, Cm-244 (EP-80, EP-80)	Co-60, EU-152, 235, U-238 (EP-70, EP-71, EP-5) Np-1-129 (RC-25, RC-605) Sr-90 (RC-306, RC-70, EP-91, EP-91, EP-91, EP-91, EP-91, EP-92, EP-93,
3) 1,250ml P:CLP; TAL Hetals, IIg, Ti 1,250ml G:Semi-VOA CLP 1,250ml G:Semi-VOA CLP 1,125ml G:Anions F,Cl,SO4 (EPA 1,125ml G:Cyanide CLP 1,125ml G:Cyanide CLP 1,125ml G:Kerosene (8015M) 1,1000ml P/G:Gross alpha/beta (EP-Eu-154,Eu-155,K-40,Ru-106 237,(RC-101A, RC-622, EP-303, RC-309, RC-304) Tc-9 [] Field Transfer of Custody Relinquished Oy: 1040	300.0) 10), Gamma Spec to include, Cs-134, Cs-137, Na-22 (RC-30), Total Uranium (EA-01C) U-5) ru-238, Pu-239/240 (EP-80, EP-81, EP-5) 9 (RC-24, RC-604) Am-241, Cm-244 (EP-80, ER-81) Received by: Poly Table 1 State 1 State 2 State	Co-60, EU-152, EP-70, EP-71, EP-5) Np- 1-129 (RC-25, RC-605) Sr-79 (RC-306, RC- 235, U-234, U-238 (EP-70, EP-71, EP-5) Np- 1-129 (RC-25, RC-605) Sr-79 (RC-306, RC- P-90, EP-91, EP-92, EP-93, EP-5) Sr-79 (Sign and Print Names) Date/Time: 10 40 9-10-93
3) 1,250ml P:CLP; TAL Hetals, lig, Ti 1,250ml Gs. VOA CLP 1,250ml Gs. VOA CLP 1,250ml G: Anions F, Cl, SO4 (EPA 1,125ml G: Anions NO2, NO3 (EPA 3 1,125ml G: Cyanide CLP 1,125ml Gw: Kerosene (8015M) 1,1000ml P/G: Gross alpha/beta (EP- Eu-154, Eu-155, K-40, Ru-106 237, (RC-101A, RC-622, EP- 303, RC-309, RC-304) Tc-9 [] Field Transfer of Custody Relinquished by: 1040	300.0) 10), Ganvan Spec to include, Cs-134, Cs-137, Na-22 (RC-30), Total Uranium (EA-01C) U-5) ru-238, Pu-239/240 (EP-80, EP-81, EP-5) (RC-24, RC-604) Am-241, Cm-244 (EP-80, EP-80, EP	Co-60, EU-152, EP-70, EP-71, EP-5) Mp-1-129 (RC-25, RC-605) Sr-79 (RC-306, RC-25, RC-605) Sr-79 (RC-306, RC-306, R
3) 1,250ml P:CLP; TAL Hetals, Ilg, Ti 1,250ml Gs. VOA CLP 1,250ml Gs. Semi VOA CLP 1,250ml Gs. Semi VOA CLP 1,125ml Gs. Semi VOA CLP 1,125ml Gs. Anions NO2, NO3 (EPA 3) 1,125ml Gs. Cyanide CLP 1,125ml Gs. Kerosene (8015M) 1,1000ml P/G:Gross alpha/beta (EP-Eu-154, Eu-155, K-40, Ru-106 237, (RC-101A, RC-622, EP-303, RC-309, RC-304) Tc-9 [] Field Transfer of Custody Relinquished by: (040 Relinquished by: (040 Relinquished by: (040 Relinquished by: (040	300.0) 10), Gamma Spec to include, Cs-134, Cs-137, Na-22 (RC-30), Total Uranium (EA-01C) U-5) Pu-238, Pu-239/240 (EP-80, EP-81, EP-5) Pu-238, Pu-239/240 (EP-80, EP-81, EP-5) Pu-238, Pu-239/240 (EP-80, EP-81, EP-5) Chain of Possession Received by: ROY, State Received by: Recei	Co-60, EU-152, EP-70, EP-71, EP-5) Np- 235, U-234, U-238 (EP-70, EP-71, EP-5) Np- 1-129 (RC-25, RC-605) Sr-90 (RC-306, RC- P-90, EP-91, EP-92, EP-93, EP-5) Sr-79 (Sign and Print Names) Date/Time: 1040 9-10-93 Date/Time: 9-14-93 0:50
3) 1,250ml P:CLP; TAL Hetals, lig, Ti 1,250ml Gs. VOA CLP 1,250ml Gs. VOA CLP 1,250ml G: Anions F, Cl, SO4 (EPA 1,125ml P/G: Anions NO2, NO3 (EPA 3 1,125ml G: Cyanide CLP 1,125ml Gu: Kerosene (8015M) 1,1000ml P/G: Gross alpha/beta (EP-Eu-154, Eu-155, K-40, Ru-106 237, (RC-101A, RC-622, EP-303, RC-309, RC-304) Tc-9 [] Field Transfer of Custody Relinquished by: 1040	300.0) 10), Ganvan Spec to include, Cs-134, Cs-137, Na-22 (RC-30), Total Uranium (EA-01C) U-5) ru-238, Pu-239/240 (EP-80, EP-81, EP-5) (RC-24, RC-604) Am-241, Cm-244 (EP-80, EP-80, EP	Co-60, EU-152. 235, U-234, U-23B (EP-70, EP-71, EP-5) Np- 1-129 (RC-25, RC-605) Sr-90 (RC-306, RC- 1-129 (RC-306, RC-306, RC-306
3) 1,250ml P:CLP; TAL Hetals, Ilg, Ti 1,250ml G:Semi-VOA CLP 1,250ml G:Semi-VOA CLP 1,125ml G:Semi-VOA CLP 1,125m	300.0) 10), Gamma Spec to include, Cs-134, Cs-137, Na-22 (RC-30), Total Uranium (EA-01C) U-5) Pu-238, Pu-239/240 (EP-80, EP-81, EP-5) Pu-238, Pu-239/240 (EP-80, EP-81, EP-5) Pu-238, Pu-239/240 (EP-80, EP-81, EP-5) Chain of Possession Received by: ROY, State Received by: Recei	Co-60, EU-152, EP-70, EP-71, EP-5) Np- 235, U-234, U-238 (EP-70, EP-71, EP-5) Np- 1-129 (RC-25, RC-605) Sr-70 (RC-306, RC-70, EP-91, EP-92, EP-93, EP-5) So-72 (Sign and Print Names) Date/Time: 1040 9-10-93 Date/Time: 9-14-93 0:50
3) 1,250ml P:CLP; TAL Hetals, lig, Ti 1,250ml Gs. VOA CLP 1,250ml Gs. VOA CLP 1,250ml Gs. Granions F, Cl, S04 (EPA 1,125ml Granions NO2, NO3 (EPA 3 1,125ml Granions NO2, NO3 (EPA 3 1,125ml Granions NO2, NO3 (EPA 3 1,125ml Granions Robert (EPA 3) 1,125ml	300.0) 300.0) 10), Gamma Spec to include, Cs-134, Cs-137, Na-22 (RC-30), Total Uranium (EA-01C) U-5) Pu-238, Pu-239/240 (EP-80, EP-81, EP-5) Pu-238, Pu-239/240 (EP-80, EP-81, EP-5) Pu-238, Pu-239/240 (EP-80, EP-81, EP-5) Chain of Possession Received by:	Co-60, EU-152, RC-605) 31-90 (RC-306, RC-70, EI-91, EI-92, EP-93, EI-9) Sc-79- Co-60, EU-152, RC-93, EP-71, EP-5) Np- 1-129 (RC-25, RC-605) 57-90 (RC-306, RC-129) (RC-25, RC-605) 57-90 (RC-306, RC-129), EP-91, EP-92, EP-93, EP-5) Sc-70 (Sign and Print Names: Date/Time: 9-10-93 Date/Time: 9-14-93 10-50 Date/Time:
3) 1,250ml P:CLP; TAL Hetals, lig, Ti 1,250ml Gs. VOA CLP 1,250ml Gs. Semi-VOA CLP 1,250ml Gs. Anions F, Cl, SO4 (EPA 1,125ml Gs. Anions NO2, NO3 (EPA 3 1,125ml Gs. Cyanide CLP 1,125ml Gw. Kerosene (8015M) 1,1000ml P/G:Gross alpha/beta (EP-Eu-154, Eu-155, K-40, Ru-106 237, (RC-101A, RC-622, EP-303, RC-309, RC-304) Tc-9 [] Field Transfer of Custody Relinquished by: Relinquished by: Relinquished by: Relinquished by:	300.0) 10), Gamma Spec to include, Cs-134, Cs-137, Na-22 (RC-30), Total Uranium (EA-01C) U-5) ru-238, Pu-239/240 (EP-80, EP-81, EP-5) 9 (RC-24, RC-604) Am-241, Cm-244 (EP-80, E Chain of Possession Received by: Roy Total Uranium (RC-01C) U-10 (RC-24), RC-604) Am-241, Cm-244 (EP-80, E Chain of Possession	Co-60, EU-152, RC-605) 31-90 (RC-306, RC-70, EI-91, EI-92, EP-93, EI-9) Sc-79- Co-60, EU-152, RC-93, EP-71, EP-5) Np- 1-129 (RC-25, RC-605) 57-90 (RC-306, RC-129) (RC-25, RC-605) 57-90 (RC-306, RC-129), EP-91, EP-92, EP-93, EP-5) Sc-70 (Sign and Print Names: Date/Time: 9-10-93 Date/Time: 9-14-93 10-50 Date/Time:

00000ac

			700000	7
Westinghouse Hanford Company		CHAIN OF	CUSTODY	
Custody Form Initiator	L E ROGERS		ter to a constant,	. ,.
	ROGERS		Telephone 376-7690	
Project Designation/Same		200-UP-2	Collection Date 9-10-93	
	ML 366		Field Logbook No. EFL-1091	 v ,
Bill of Lading/Airbill B			Offsite Property No.	<i>:</i> ;
	ERNIGHT AIR S	EDVICE	orraite rioperty no.	-
_	Childin Alk S	CKYTCL		
Shipped toTMA			all DETECTED	
Possible Sample Hazards/	Remarks Keep	samples at 4C (SOIL) N	DNE PETECIED	
1)		Sample Identification		
7,250ml P:CLP; 250ml Gs:VOA 1,250ml G:Semi 1,125ml G:Cynn 1,125ml G:Cynn 1,125ml G:Kero 1,125ml G:Kero 1,125ml G:Kero 1,250ml P:CLP; 237,(RC- 303, RC- 303, RC- 1,250ml Gs:VOA 1,250ml Gs:VOA 1,250ml Gs:VOA 1,250ml G:Cynn 1,125ml G:Cynn 1,250ml G:Cynn 1,	-VOA CLP	(3.2) (0), Gamma Spec to include, Cs-134, Na-22 (RC-30), Total Uranium (EA-1) Pu-238, Pu-239/240 (EP-80, EP-8) (RC-24, RC-604) Am-241, Cm-244 (EM-244, Cm-244) (EM-244), Cm-244	01C) U-235,U-234,U-238 (EP-70, EP-71, EP-5) Np , EP-5) I-129 (RC-25, RC-605) Sr-90 (RC-306, RC EP-80, EP-90, EP-91, EP-92, EP-93, EP-5) Sc-79	C-
1,250ml Gs:VOA 1,250ml aG:Semi 1,125ml G:Arnio 1,125ml G:Craio 1,125ml G:Craio 1,125ml Gu:Kero 1,1000ml P/G:Gros Eu-154,6 237,(RC-	-VOA CLP ens F,Cl,SO4 (EPA) ens NOZ,NO3 (EPA 3) end CLP escent (8015M) s alpha/beta (EP- u-155,K-40,Ru-106 101A, RC-622, EP-	53.2) 10), Gamma Spec to include,Cs-134, Na-22 (RC-30), Total Uranium (EA	,Cs-137,Co-60,Eu-152, -01C) U-235,U-234,U-238 (EP-70, EP-71, EP-5) Np 1, EP-5) 1-129 (RC-25, RC-605) Sr-90 (RC-306, R EP-80, EP-90, EP-91, EP-92, EP-93, EP-5) Se-79	RC-
[] Field Transfer		Chain of Possession	(Sign and Print Name	
Rel inquished by:	1040	Received by: PoyT 50ch	Date/Time:	
Horane Hogal	19-10-93	- The fact	9-10-93 1040	
Relinquished by:	IT Sichele	Received by: IH. HARLIS	Date/Time:	
Fant Sul	9-10:93	Jenis st	9-14-93 10:50	
Relinquished by:		Received by:	Date/Time:	
Relinquished by:		Received by:	Date/Time:	

Final Sample Disposition

Disposed by:

. A-6000-407 (12/90) (Er) WEF061 Chain of Custody

Disposal Hethod: Comments: Date/Time:

ATTACHMENT 5 DATA VALIDATION SUPPORTING DOCUMENTATION

GC/MS ORGANIC DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	В	С	D	(E)
PROJECT: 2	6-90-00		DATA PACKA	GE: 859332-	m4-611
VALIDATOR;	White L	LAB: TOTA		DATE: 03	1
CASE:			SDG: 8=9	332-Tm4	-611
		ANALYSES	PERFORMED		
CLP Volatiles	SW-846 8240 (cap column)	SW-846 8260 (packed column)	☐ CLP Semivolatiles	SW-846 8270 (csp column)	SW-846 (packed column)
0	0	0	0	0	
Is technical	KAGE COMPLETED verification rrative present	documentation	n present?		Yes No N/A
	TIMES olding times				Yes No N/A

GC/MS ORGANIC DATA VALIDATION CHECKLIST

Is the GC/MS tuning/performance check acceptable? (Yes) No N/A
Are initial calibrations acceptable? Yes No N/A
Are continuing calibrations acceptable? Yes No N/A
Comments:
4. BLANKS
Were laboratory blanks analyzed? Yes No N/A
Are laboratory blank results acceptable? Yes No N/A
Were field/trip blanks analyzed? Yes No N/A
Are field/trip blank results acceptable? Yes No N/A
Comments: fratene and Mc CC neix detected in
the asser labilitiest
Sample B-9335 is a solid tois Hack-all segult
are No with exception of aptic dations
5. ACCURACY are situated hydricintoon.
Were surrogates/System Monitoring Compounds analyzed? Yes No N/A
Are surrogate/System Monitoring Compound recoveries acceptable? Yes No N/A
Were MS/MSD samples analyzed? Yes No N/A
Are MS/MSD results acceptable? Yes No N/A
Comments:

GC/MS ORGANIC DATA VALIDATION CHECKLIST

6. PRECISION	
Are MS/MSD RPD values acceptable?	N/A
Are field duplicate RPD values acceptable? Yes No	N/A
Are field split RPD values acceptable? Yes No (N/A
Comments:	
7. SYSTEM PERFORMANCE	
Were internal standards analyzed? Yes No	N/A
Are internal standard areas acceptable? Yes No	N/A
Are internal standard retention times acceptable? Yes No	N/A
Comments:	
8. COMPOUND IDENTIFICATION AND QUANTITATION	
Is compound identification acceptable? Yes No	N/A
Is compound quantitation acceptable? Yes No	N/A
Comments:	
·	
9. REPORTED RESULTS AND QUANTITATION LIMITS	
Are results reported for all requested analyses? Yes No	N/A
Are all results supported in the raw data? Yes No	N/A
Do results meet the CRQLs? Yes No	N/A
Has the laboratory properly identified and coded all TIC? Yes No	N/A
Comments:	
·	

HOLDING TIME SUMMARY

859333		VALIDATOR:	Malini		DATE: 3/2/4	P/	GEOF
COMMENTS: Va	stadile.	VALIDATOR:	ias		-		
FIELD SAMPLE	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED	DATE ANALYZED	PREP. HOLDING TIME, DAYS	ANALYSIS HOLDING TIME, DAYS	QUALIFIER
209332	SOU	09/09/93		9/15/93		7	Nerva
329333		09/10/93				6	
3-9335		59/09/93				7	
309336	D	onlos		1		Ь	1
						•	
					·		

EPA SAMPLE NO.

1A VOLATILE ORGANICS ANALYSIS DATA SHEET

VBLK0916R

Lab Name: TMA/ARLI Contract: WHC Lab Code: TMALA Case No.: 09028 SAS No.: NA SDG No.: NA Lab Sample ID: SBLK0916 Matrix: (soil/water) SOIL Sample wt/vol: 5.0 (g/mL) G Lab File ID: 30916R03 Date Received: Level: (low/med) LOW Date Analyzed: 09/16/93 % Moisture: not dec. ____ GC Column: PACK ID: 2.00 (mm) Dilution Factor: 1.0 Soil Aliquot Volume: ____(uL) Soil Extract Volume: ____(uL) CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG CAS NO. COMPOUND Q 74-87-3-----Chloromethane 10 U 74-83-9-----Bromomethane 10 U 75-01-4-----Vinyl Chloride 10 U 75-00-3-----Chloroethane 10 75-09-2-----Methylene Chloride 67-64-1-----Acetone 75-15-0-----Carbon Disulfide 10 U 75-35-4----1, 1-Dichloroethene 10 IU 75-34-3-----1,1-Dichloroethane_ 10 U 540-59-0----1, 2-Dichloroethene (total) 10 67-66-3-----Chloroform 10 IU 107-06-2----1, 2-Dichloroethane 10 U 78-93-3----2-Butanone IU 10 71-55-6----1,1,1-Trichloroethane 10 IU 56-23-5-----Carbon Tetrachloride 10 U 75-27-4----Bromodichloromethane 10 IU IU 78-87-5----1, 2-Dichloropropane 10 10061-01-5----cis-1,3-Dichloropropene 10 U 10 79-01-6-----Trichloroethene U 124-48-1-----Dibromochloromethane 10 U 79-00-5----1,1,2-Trichloroethane 10 U 71-43-2----Benzene 10 IU 10061-02-6----trans-1,3-Dichloropropene 10 U 75-25-2-----Bromoform 10 U 108-10-1-----4-Methyl-2-Pentanone 10 U 591-78-6----2-Hexanone 10 U 127-18-4----Tetrachloroethene 10 U 79-34-5----1,1,2,2-Tetrachloroethane 10 IU 108-88-3----Toluene 10 IU 108-90-7-----Chlorobenzene 10 U 100-41-4----Ethylbenzene 10 U -028 100-42-5----Styrene 10 U 1330-20-7-----Xylene (total) U

FORM I VOA

94535494 9452475D ATTACHMENT 19 Page 1 of 29

VOLATILE ORGANIC DATA VALIDATION SUMMARY FOR DATA PACKAGE: B09332-TMA-611 (923-E418, Filename B09332.VOA)

HAR 1994 RECEIVED

TO: 200-UP-2 Project QA Record

March 2, 1994

FR: Susan Winter, Golder Associates Inc,

RE: VOLATILE ORGANIC DATA VALIDATION SUMMARY FOR DATA PACKAGE:

B09332-TMA-611 (923-E418, Filename B09332.VOA)

INTRODUCTION

This memo presents the results of data validation on data package B09332-TMA-611 prepared by the Thermo Analytical (TMA) laboratory. A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

SAMPLE ID	SAMPLE DATE	MEDIA	ANALYSIS
B09332	09/09/93	SOIL	SEE NOTE 1
B09333	09/10/93	SOIL	
B09335	09/09/93	SOIL	
B09336	09/10/93	SOIL	

Data validation was conducted in accordance with the WHC statement of work (WHC 1993a) and validation procedures (WHC 1993b). Attachments 1 through 5 provide the following information as indicated below:

Attachment 1. Glossary of Data Reporting Qualifiers

Attachment 2. Summary of Data Qualifications

Attachment 3. Qualified Data Summary and Annotated Laboratory Reports

Attachment 4. Laboratory Narrative and Chain-of-Custody Documentation

Attachment 5. Data Validation Supporting Documentation

DATA QUALITY OBJECTIVES

Precision. Goals for precision were met.

Accuracy. Goals for accuracy were met.

Sample Result Verification. All sample results were supported in the raw data.

Detection Limits. Detection limit goals were met for all sample results as specified in the reference analytical method.

Completeness. The data package was complete for all requested analyses. A total of four samples were validated in this data package with a total of 132 determinations reported, all of which were deemed valid. This results in a completeness of 100 percent, which meets normal work plan objectives of 90%.

MAR

Sample B09335 was identified as a solid trip blank in which all results were verified as nondetects with the exception tentatively identified compound (TIC) labeled as an unknown hydrocarbon at a retention time of 27.50 minutes and at a concentration of 8 μ g/kg. This sample, B09335, is the only sample in this data package in which a TIC was detected.

MAJOR DEFICIENCIES

No major deficiencies were identified during data validation which required qualification of data as unusable.

MINOR DEFICIENCIES

The following minor deficiencies were identified during data validation which required qualification of data.

Laboratory Blanks

• Methylene chloride and acetone were present in the associated laboratory blank. Attachments 2 and 5 provide a summary of the affected samples, data qualifications applied and supporting documentation.

REFERENCES

WHC 1993a, Validation of 200-UP-2 Data, Statement of Work, Analytical Laboratory Data Validation, Task Order S-94-18, December 14, 1993, Purchase Order M073750. Westinghouse Hanford Company, Richland, Washington.

WHC 1993b, Data Validation Procedures for Chemical Analyses, WHC-SD-EN-SPP-002, Rev. 2, 1993. Westinghouse Hanford Company, Richland, Washington.

ATTACHMENT 1 GLOSSARY OF DATA REPORTING QUALIFIERS

GLOSSARY OF ORGANIC DATA REPORTING QUALIFIERS

- B Indicates the constituent was analyzed for and detected in the associated laboratory blank. This qualifier is applied by the laboratory. During the process of data validation this qualifier may be replaced by other appropriate qualifiers as defined by the validation procedures. The associated data should be considered usable for decision making purposes.
- U Indicates the constituent was analyzed for and not detected. The concentration reported is the sample quantitation limit corrected for aliquot size, dilution and percent solids (in the case of solid matrices) by the laboratory. The associated data should be considered usable for decision making purposes.
- UJ Indicates the constituent was analyzed for and not detected. Due to a minor quality control deficiency identified during data validation the concentration reported may not accurately reflect the sample quantitation limit. The associated data should be considered usable for decision making purposes.
- J Indicates the constituent was analyzed for and detected. This qualifier may be applied by the laboratory to indicate a concentration which is less than the contract required quantitation limit (CRQL) but greater than the instrument detection limit (IDL). During data validation this qualifier may be applied to indicate a minor quality control deficiency. However in either case, the associated data should be considered usable for decision making purposes.
- NJ Indicates presumptive evidence of a constituent at an estimated value. This qualifier is normally applied to GC analysis data (such as organochlorine pesticide and PCB data). The associated data should be considered usable for decision making purposes.
- N Indicates presumptive evidence of a constituent. This qualifier is normally applied to GC analysis data (such as organochlorine pesticide and PC3 data). The associated data should be considered usable for decision making purposes.
- JN Indicates a tentatively identified compound (TIC) whose concentration and identification have been determined to be valid as a result of data validation. The associated data should be considered usable for decision making purposes.
- UR Indicates the constituent was analyzed for and not detected. The concentration reported has been qualified as unusable due to a major quality control deficiency identified during data validation. The associated data should be considered unusable for decision making purposes.
- R Indicates the constituent was analyzed for and detected. The concentration reported has been qualified as unusable due to a major quality control deficiency identified during data validation. The associated data should be considered unusable for decision making purposes.

ATTACHMENT 2 SUMMARY OF DATA QUALIFICATIONS

DATA QUALIFICATION SUMMARY

SDG: B09332-TMA-611	VALIDATA	DATE: March 4, 1994	PAGE 1 OF 1
COMMENTS: VOLATILE ORGAN	1 :1111		
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
ACETONE	υ	B09332 B09333 B09336	PRESENT IN LABORATORY BLANK
UNKNOWN HYDROCARBON @ RT 27.5 MINUTES	JN	B09335	IDENTIFIED AS A VALID RESULT USING DATA VALIDATION PROCEDURES
	·		

ATTACHMENT 3 QUALIFIED DATA SUMMARY AND ANNOTATED LABORATORY REPORTS

Validated Data Summary, Data Package: 809332-1MA-611

	Samp# Date Location Depth Type Comments	809332 9-9-93 299-W19-9 60.00 - 62	.50	809333 9-10-93 299-W19-9 50.00 - 50	2.50	809335 9-9-93 299-W19-		809336 9-10-93 299-W19-9 74.80 - 77	7.30
Parameter	Units	Result	Q	Result	Q	Result	Q	Result	Q
CHLOROMETHANE	UG/KG	11.000	U	12.000	U	10.000	U	10.000	ı
BROHOHETHANE	UG/KG	11.000	U	12.000	U	10.000	U	10.000	
VINYL CHLORIDE	UG/KG	11.000	U	12.000	U	10.000	U	10.000	ı
CHLOROETHANE	UG/KG	11.000	U	12.000	U	10.000	U	10.000	
METHYLENE CHLORIDE	UG/KG	11.000	U	12.000	U	10.000	U	10.000	-
ACETONE	UG/KG	11.000	U	12.000	U	10.000	U	10.000	-
CARBON DISULFIDE	UG/KG	11.000	U	12.000	U	10.000	U	10.000	
1, 1-DICHLOROETHENE	UG/KG	11.000	U	12.000	U	10.000	U	10.000	- 1
1, 1-DICHLOROETHANE	UG/KG	11.000	U	12.000	·ul	10.000	U	10.000	-
1,2-DICHLOROETHENE (TOTAL)	UG/KG	11.000	U	12.000	· U	10.000	U	10.000	
CHI OROFORM	UG/KG	11.000	U	12,000	u	10.000	U	10.000	1
1,2-DICHLOROETHANE	UG/KG	11.000	U	12.000	U	10.000	U	10.000	-
2-BUTANONE	UG/KG	11.000	U	12,000	U	10.000	U	10.000	
1.1.1-TRICHLOROETHANE	UG/KG	11.000	U	12.000	u	10.000	U	10.000	- 1
CARBON TETRACHIORIDE	UG/KG	11.000	U	12.000	U	10,000	U	10,000	1
BROMODICHLOROMETHANE	UG/KG	11.000	U	12.000	U	10.000	· U	10.000	
1.2-DICHLOROPROPANE	UG/KG	11.000	U	12.000	u	10.000	U	10,000	
CIS-1,3-DICHLOROPROPENE	UG/KG	11.000	ul	12.000	U	10,000	U	10,000	
TRICHLOROETHENE	UG/KG	11.000	u	12.000	U	10.000	U	10.000	
DIBROMOCHLOROMETHANE	UG/KG	11.000	ū	12.000	ŭ l	10.000	U	10.000	
1,1,2-TRICHLOROETHANE	UG/KG	11.000	U	12.000	u	10.000	U	10.000	
BENZENE	UG/KG	11.000	Ü	12.000	ŭ l	10.000	ŭ	10.000	
TRANS-1,3-DICHLOROPROPENE	UG/KG	11.000	U	12.000	U	10.000	U	10.000	
BRUNOFORM	UG/KG	11.000	u	12.000	Ü	10.000	Ü	10.000	
4-METHYL-2-PENTANONE	UG/KG	11.000	u	12.000	u	10.000	Ü	10.000	
2-HEXANONE	UG/KG	11.000	ü	12.000	Ü	10.000	ŭ	10.000	
TETRACHLOROETHENE	UG/KG	11.000	υl	12.000	ŭ	10.000	Ü	10,000	
1,1,2,2-TETRACHLOROETHANE	UG/KG	11.000	ŭ	12.000	u l	10.000	Ü	10.000	
TOLUENE	UG/KG	11.000	Ü	12.000	u l	10.000	Ü	10.000	
CHLOROBENZENE	UG/KG	11.000	ŭ	12.000	u l	10.000	Ü	10.000	
ETHYLBENZEHE	UG/KG	11.000	u l	12.000	ŭ	10.000	ŭ	10.000	
STYRENE	UG/KG	11.000	Ü	12.000	ŭ	10.000	ŭ	10.000	
XYLENES (TOTAL)	UG/KG	11.000	U	12.000	ŭ	10.000	u	10,000	

Million Joslay

VOLATILE ORGANICS ANALYSIS DATA SHEET

249- W19-95

Lab Code: TMALA Case No.: 09028 SAS No.: NA SDG No.: NA Matrix: (soil/water) SOIL Lab Sample ID: A309028-01A Sample wt/vol: 5.0 (g/mL) G Lab File ID: 30916R15 Level: (low/med) LOW Date Received: 09/14/93 % Moisture: not dec. 6 Date Analyzed: 09/16/93 GC Column: PACK ID: 2.00 (mm) Dilution Factor: 1.0 Soil Extract Volume: (uL) Soil Aliquot Volume: (CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG Q CAS NO. COMPOUND (ug/L or ug/Kg) UG/KG Q 74-87-3	
Sample wt/vol: 5.0 (g/mL) G Lab File ID: 30916R15 Level: (low/med) LOW Date Received: 09/14/93 % Moisture: not dec. 6 Date Analyzed: 09/16/93 GC Column: PACK ID: 2.00 (mm) Dilution Factor: 1.0 Soil Extract Volume: (uL) Soil Aliquot Volume: (ug/L or ug/Kg) UG/KG Q CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG Q Q 74-87-3	
Level: (low/med) LOW Date Received: 09/14/93 % Moisture: not dec. 6 Date Analyzed: 09/16/93 GC Column: PACK ID: 2.00 (mm) Dilution Factor: 1.0 Soil Extract Volume: (uL) Soil Aliquot Volume: (ug/L or ug/Kg) (ug/Kg) 0 CAS NO. COMPOUND (ug/L or ug/Kg) UG/KG Q 74-87-3	
% Moisture: not dec6 Date Analyzed: 09/16/93 GC Column: PACK	
GC Column: PACK ID: 2.00 (mm) Dilution Factor: 1.0 Soil Extract Volume: (uL) Soil Aliquot Volume: (1) CAS NO. COMPOUND (ug/L or ug/Kg) UG/KG Q 74-87-3Chloromethane 11 U 1 1 U 1 1 1 U 1 1	
Soil Extract Volume:(uL)	
CAS NO. COMPOUND (ug/L or ug/Kg) UG/KG Q 74-87-3Chloromethane 11 U	
CAS NO. COMPOUND (ug/L or ug/Kg) UG/KG Q 74-87-3Chloromethane 11 U	uL)
74-83-9Bromomethane 11 U	Q
75-00-3Chloroethane	. 009

FORM I VOA

Jes Sald 3/90

1E VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

Lab Name: TMA/ARLI	Contract: WHC 60-62.5'
Lab Code: TMALA Case No.: 09028	
Matrix: (soil/water) SOIL	Lab Sample ID: A309028-01A
Sample wt/vol: 5.0 (g/mL) G	Lab File ID: 30916R15
Level: (low/med) LOW	Date Received: 09/14/93
% Moisture: not dec. 6	Date Analyzed: 09/16/93
GC Column: PACK ID: 2.00 (mm)	Dilution Factor: 1.0
Soil Extract Volume: (uL)	Soil Aliquot Volume:(uL)
Number TICs found: 0	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG
CAS NUMBER COMPOUND NAI	ME RT EST. CONC. Q

010

Salketa 3/90 FORM I VOA-TIC

9443225.1543

1A VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

Lab Name: TMA/ARLI		Contract: WHC	B09333 50-52.5'
Lab Code: TMALA	Case No.: 09028	SAS No.: NA SDG	No.: NA
Matrix: (soil/water)	SOIL	Lab Sample ID:	A309028-02A
Sample wt/vol:		Lab File ID:	30916R12
Level: (low/med)	LOW	Date Received:	09/14/93
% Moisture: not dec.	17	Date Analyzed:	09/16/93
GC Column: PACK	ID: (mm)	Dilution Factor	r:1.0
Soil Extract Volume:	(uL)	Soil Aliquot V	olume:(uL)
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/K	<u>e</u> 2 2

CAS NO.	COMPOUND (ug/L of ug/.	rd) <u>og/ra</u>	<u> </u>
	Chloromethane	12	U
74-83-9	Bromomethane	12 1	u i
75-01-4	Vinyl Chloride	12 1	u i
75-00-3	Chloroethane	12	u i
75-09-2	Methylene Chloride	12	u i
67-64-1	Acetone	12 -5 +	BJ- IU
75-15-0	Carbon Disulfide		U
75-35-4	1,1-Dichloroethene	12	U
75-34-3	l, 1-Dichloroethane	12	υi
540-59-0	1,2-Dichloroethene (total)	12	υi
	Chloroform		U
107-06-2	1,2-Dichloroethane	12	u i
78-93-3	2-Butanone		U
	l,l,l-Trichloroethane		U
56-23-5	Carbon Tetrachloride		U
75-27-4	Bromodichloromethane		U
78-87-5	1,2-Dichloropropane	,	U
10061-01-5-	cis-1,3-Dichloropropene		U
79-01-6	Trichloroethene		U i
124-48-1	Dibromochloromethane		Ū i
79-00-5	1,1,2-Trichloroethane		Ū
	Benzene		Ū -
	trans-1,3-Dichloropropene		U
75-25-2	Bromoform		U
	4-Methyl-2-Pentanone		U
591-78-6	2-Hexanone		Ū i
	Tetrachloroethene		U
79-34-5	1,1,2,2-Tetrachloroethane		U
108-88-3	Toluene		Ū i
108-90-7	Chlorobenzene		ם ו
100-41-4	Ethylbenzene	,	ט
100-42-5	Styrene		
1220-20-7	styrene		n 01
1330-20-7	Xylene (total)	12	ט ן

FORM I VOA

Verificate 3294

VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

= 000102 EPA SAMPLE NO. 299-119-97

B09333

Lab Name: TMA/ARLI	Contract: WHC 5=-55
Lab Code: TMALA Case No.: 09028	SAS No.: NA SDG No.: NA
Matrix: (soil/water) SOIL	Lab Sample ID: A309028-02A
Sample wt/vol:	Lab File ID: 30916R12
Level: (low/med) LOW	Date Received: 09/14/93
% Moisture: not dec. 17	Date Analyzed: 09/16/93
GC Column: PACK ID: 2.00 (mm)	Dilution Factor: 1.0
Soil Extract Volume: (uL)	Soil Aliquot Volume:(uL)
Number TICs found:0	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG
CAS NUMBER COMPOUND NA	ME RT EST. CONC. Q
No. of the Control of	

012

FORM I VOA-TIC

Jest Street 3/90

1A VOLATILE ORGANICS ANALYSIS DATA SHEET

75-25-2----Bromoform

591-78-6----2-Hexanone

108-90-7-----Chlorobenzene

100-41-4----Ethylbenzene

1330-20-7-----Xylene (total)

108-88-3----Toluene

100-42-5-----Styrene

108-10-1----4-Methyl-2-Pentanone

79-34-5----1, 1, 2, 2-Tetrachloroethane

127-18-4-----Tetrachloroethene

100111 EPA SAMPLE NO. 299-W9-97

Lab Name: TMA/ARLI	Contract: WHC Still Trip Blink
Lab Code: TMALA Case No.: 09028	
Matrix: (soil/water) SOIL	Lab Sample ID: <u>A309028-04A</u>
	•
Sample wt/vol: 5.0 (g/mL) G	Lab File ID: 30916R14
Level: (low/med) LOW	Date Received: 09/14/93
% Moisture: not dec0	Date Analyzed: 09/16/93
GC Column: PACK ID: 2.00 (mm)	Dilution Factor: 1.0
Soil Extract Volume: (uL)	Soil Aliquot Volume:(uL)
	CONCENTRATION UNITS:
CAS NO. COMPOUND	(ug/L or ug/Kg) UG/KG Q
74-87-3Chloromethane	10 U
74-83-9Bromomethane	10 U
75-01-4Vinyl Chloride	10 U
75-00-3Chloroethane	10 U
75-09-2Methylene Chlo	ride 10 U
67-64-1Acetone	10 0
75-15-0Carbon Disulfi	
75-35-41,1-Dichloroet	
75-34-31,1-Dichloroet	hane 10 U
540-59-01,2-Dichloroet	hene (total) 10 U
67-66-3Chloroform	10 U
107-06-21,2-Dichloroet	
78-93-32-Butanone	
71-55-61,1,1-Trichlor	10 U
56-23-5Carbon Tetrach	
56-23-5Carbon Tetrach	loride 10 U
75-27-4Bromodichlorom	ethane 10 U
78-87-51,2-Dichloropr	opanel0 U
10061-01-5cis-1,3-Dichlo	ropropene 10 U
79-01-6Trichloroethen	e
124-48-1Dibromochlorom	ethane 10 U
79-00-51,1,2-Trichlor	oethane 10 U
71-43-2Benzene	10 U -
10061-02-6trans-1,3-Dich	loropropene 10 U

FORM I VOA VEESTED

3/90

6013

Versted Silliate 2/2/94

10

10

10

10

10

10

10

10

10

10

U

U

U

U

U

U

U

U

U

U

000112

1E VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

UNKNOWN HYDROCARBON

299- WIG-97

B09335

8

Lab Name: TMA/ARLI	Contract: WHC
Lab Code: TMALA Case No.: 09028	SAS No.: NA SDG No.: NA
Matrix: (soil/water) SOIL	Lab Sample ID: <u>A309028-04A</u>
Sample wt/vol:	Lab File ID: 30916R14
Level: (low/med) LOW	Date Received: 09/14/93
% Moisture: not dec0	Date Analyzed: 09/16/93
GC Column: PACK ID: 2.00 (mm)	Dilution Factor: 1.0
Soil Extract Volume: (uL)	Soil Aliquot Volume:(uL)
Number TICs found:	CONCENTRATION UNITS:

CAS NUMBER

EST. CONC. COMPOUND NAME RT Q

27.50

-014

FORM I VOA-TIC State 3/2/94

lA VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: TMA/ARLI	Contract: WHC B09336 74.8-77.3'
Lab Code: TMALA Case No.: 09028	SAS No.: NA SDG No.: NA
Matrix: (soil/water) SOIL	Lab Sample ID: A309028-03A
Sample wt/vol: 5.0 (g/mL) G	Lab File ID: 30916R13
Level: (low/med) LOW	Date Received: 09/14/93
% Moisture: not dec3	Date Analyzed: 09/16/93
GC Column: PACK ID: 2.00 (mm)	Dilution Factor: 1.0
Soil Extract Volume: (uL)	Soil Aliquot Volume:(uL)
CAS NO. COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG Q
74-87-3	10

FORM I VOA

Verified 3/2/94

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

2	99.	DAM - L	19-	95
7	11	0_	1-1-	
1	200	9336		1

Lab Name: TMA/ARLI	Contract: WHC 174.8-7.7 77
Lab Code: TMALA Case No.: 09028	SAS No.: NA SDG No.: NA 31249
Matrix: (soil/water) SOIL	Lab Sample ID: A309028-03A
Sample wt/vol: 5.0 (g/mL) G	Lab File ID: 30916R13
Level: (low/med) LOW	Date Received: 09/14/93
% Moisture: not dec. 3	Date Analyzed: 09/16/93
GC Column: PACK ID: 2.00 (mm)	Dilution Factor: 1.0
Soil Extract Volume: (uL)	Soil Aliquot Volume:(uL)
Number TICs found:0	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG
1 - 6	ME RT EST. CONC. Q

016

FORM I VOA-TIC CENTER!

ATTACHMENT 4 LABORATORY NARRATIVE AND CHAIN-OF-CUSTODY DOCUMENTATION



CASE NARRATIVE

LABORATORY : TMA/ARLI

CASE: 09-028

CONTRACT ID : WESTINGHOUSE HANFORD COMPANY

SDG RECEIPT DATE: September 14, 1993

1.0 DESCRIPTION OF CASE :

Four soil samples were analyzed for TCL Organics- Volatiles and Semivolatiles according to the USEPA Contract Laboratory Program (CLP) Statement of Work for Organic Analysis, Revision OLM01.8. The Extractable Hydrocarbons in the Kerosene Range (K) were analyzed according to the SW-846 Method 8015M.

AMMITVETE

2.0 SAMPLE LIST :

		ANALYSIS	
WESTINGHOUSE ID	LAB ID	REQUESTED	MATRIX
B09332	A3-09-028-01A	Λ	SOIL
B09332 MS	A3-09-028-01B	V	SOIL
B09332 MSD	A3-09-028-01C	V	SOIL
B09332	A3-09-028-01D	sv	SOIL
B09332	A3-09-028-01G	K	SOIL
B09333	A3-09-028-02A	Λ	SOIL
B09333	A3-09-028-02B	sv	SOIL
B09333 MS	A3-09-028-02C	sv	SOIL
B09333 MSD	A3-09-028-02D	sv	SOIL
B09333	A3-09-028-02G	K	SOIL
B09336	A3-09-028-03A	Λ	SOIL
B09336	A3-09-028-03B	sv	SOIL
309336	A3-09-028-03D	K	SOIL
B09336 MS	A3-09-028-03E	X	SOIL
B09336 MSD	A3-09-028-03F	K	SOIL
B09335	A3-09-028-04A	Λ	SOIL

3.0 COMMENTS:

3.1 SHIPPING AND DOCUMENTATION :

All of the samples were received intact and properly documented.

3.2 ANALYSIS

3.2.1 VOLATILE ANALYSIS COMMENTS :

LOW LEVEL SOIL :

The samples were analyzed by heated purge within the CLP SOW holding times.

All of the QC results were within the limits specified by the EPA CLP SOW.

TUNES :

All BFB tunes were injected directly into the GC/MS instrument.

3.2.2 SEMIVOLATILE ANALYSIS COMMENTS :

LOW LEVEL SOIL :

The samples were extracted and analyzed within the CLP SOW holding times. Phenol was detected in sample B09336 at a concentration that was below the CRQL.

The matrix spike recovery of 2,4-Dinitrotoluene in sample B09333MS was slightly above the QC limits. In accordance with the protocol, no further action was required.

All of the other QC results were within the limits specified by the EPA CLP SOW.

3.2.3 EXTRACTABLE HYDROCARBONS "KEROSENE RANGE" COMMENTS :

SEQUENCE NOTES :

The sequence was started on 09/16/93 and was analyzed according to the SW-846 Method 8015M. The initial calibration consisted of 5 different levels of the Kerosene standard that ranged from 200ppm to 2000ppm. The continuing calibration at the 1000ppm level was injected amongst a series of samples, in order to verify the instrument stability. The %RSD in the initial calibration and the %D in the continuing calibration were below their 20% and 15% limits, respectively.

SAMPLE NOTES :

LOW LEVEL SOIL :

The samples were extracted and analyzed for extractable hydrocarbons in the Kerosene range within the required holding times. Approximately 20 g of each sample was extracted and concentrated to 5 mL.

There were no hydrocarbons detected in any of the samples. Sample 309336 was spiked with Kerosene and the matrix spike recoveries were 35% and 93%. A blank spike was prepared at the same time, and had an 79% recovery.

All of the QC results were within the limits specified by the SW-846 Method 3015M.

We certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data in this hardcopy data package and in the computer-readable data submitted on diskette is authorized by the Laboratory Manager or his designee, as verified by the following signatures.

Nicole Roth

CLP Program Manager

Maureen Parrish

Maureen Parrish 11/24/93

Project Manager

000002A

Westing	liouse
Hanford	Company

CHAIN OF CUSTODY

Custody Form Initiator L E ROGER	5	The second second second
- Company Contact L E ROGERS		ephone 376-7690
Project Designation/Sampling Locations	200-UP-2 co	lection Date 9-9-93
Ice Chest No. 105 5ML 366		ld Logbook No. EFL-1091
Bill of Lading/Airbill No.		site Property No.
Method of Shipment OVERNIGHT AIR	SERVICE	***
7144		
	samples at 4C (SOIL) NOT	IE DETECTABLE
Possible Sample Hazards/Remarks Keep	Sample Identification	DE DETELIANDRE
1)	B00331	
120ml 7.250ml P:CLP:IAL Hetals, Hg, Ti	100-1002	
1,250ml nG:Scmi-VOA CLP	100 03	•
1,125ml G:Animus F,Cl,SO4 (EPA		
1,125ml G:Cyanide CLP Gw:Kerosene (8015H)		
1.1000ml P/G:Gross alpha/beta (El	P-10), Gamma Spec to include, Cs-134, Cs-1	7,Co-60,Eu-152, U-235,U-234,U-238 (EP-70, EP-71, EP-5) Np-
237, (RC-101A, RC-622, El	r-5) ru-238,ru-239/240 (EP-80, EP-81, EP-	·5) 1-129 (RC-25, RC-605) Sr-90 (RC-306, RC-
303, RC-309, RC-304) 1c-	-99 (RC-24, RC-604) Am-241, Cm-244 (EP-80	EP-90, EP-91, EP-92, EP-93, EP-5) Se-79
2)	-B09334 BD9335	
120ml PIGLP, TAL Hetals, Hg, T		
1 25ml - G-Anique F CL 504 (FR	9-10-93	~
1,125ml P/C:Anione UN2 UN3 (EPA		•
1.125ml Greysnide CLP		
	n 10) C	
	107, WHITE Spec to Include, 60 154, 65	77, Ga 60, Eu 152;
Eu 154, Eu 155, K-40, Ru-11	P-10), General Spec to include, Co-13/, Co-106, Na-22 (RC-30), local uranium (EA-UIC)	U-235,U-234,U- 238 (EP-70, EP-71, EP-5) Np-
237, (RC 101A, RC 622, E	06,88-22 (RC-30), local Granium (EX-010) P-5) Pu-238,Pu-239/240 (ER-30, EP-81, EP	5) 1-129 (RC 25, RC 605) 31-90 (RC 306, RC
237, (RC 101A, RC 622, El 303, RC 307, RG 304) Ye	06, MA-22 (RC-30), Total Uranium (EA-UTC)	5) 1-129 (RC-25, RC 605) 31-90 (RC-306, RC
237, (RC 1014, RC 622, El -303, RC 307, RC 304) Ye	06,03-22 (RC-30), 10tol Oranium (EA-01C) P-5)-Pu-238,Pu-259/240 (EP-30, EP-81, EP -99 (RC-24, RC-604) Am-241,Em-244 (EP-30	5) 1-129 (RC-25, RC 605) 31-90 (RC-306, RC
3) 1.250ml P:CLP:IAL Hetals, Ilg, I	06,03-22 (RC-30), 10tol Oranium (EA-01C) P-5)-Pu-238,Pu-259/240 (EP-30, EP-81, EP -99 (RC-24, RC-604) Am-241,Em-244 (EP-30	5) 1-129 (RC-25, RC 605) 31-90 (RC-306, RC
3) 1,250ml P:CLP; IAL Hetals, llg, I 1,250ml Gs:VOA CLP 1,250ml aG:Semi-VOA CLP	06,03-22 (RC-30), 10tol Oranium (EA-01C) P 5) Pu-238,Pu-239/240 (EP-30, EP-81, EP -09 (RC-24, 2C-404) Am-241,2m 244 (EP-30	5) 1-129 (RC-25, RC 605) 31-90 (RC-306, RC
3) 1.250ml P:CLP:IAL Hetals, Ilg, I 1.250ml Gs:VOA CLP 1.250ml G:Semi-VOA CLP 1.125ml G:Anions F,Cl, SO4 (EPA 1.125ml P/G:Anions HOZ, NO3 (EPA	06, MR-22 (RC-30), 10tol Oranium (EA-010) P 5) Pu 338, Pu-319/240 (Ef-30, EF-81, EF97 (RC-24, 2C-404) Am-241, Em-244 (Ef-30 i A 300.0)	5) 1-129 (RC-25, RC 605) 31-90 (RC-306, RC
3) 1,250ml P:CLP:TAL Hetals, llg, T 1,250ml Gs:VOA CLP 1,250ml G:Semi-VOA CLP 1,125ml G:Anions F,Cl, SO4 (EPA 1,125ml G:Cyanide CLP 1,125ml G:Cyanide CLP	06, MR-22 (RC-30), 10tol Oranium (EA-010) P 5) Pu 338, Pu-319/240 (Ef-30, EF-81, EF97 (RC-24, 2C-404) Am-241, Em-244 (Ef-30 i A 300.0)	5) 1-129 (RC-25, RC 605) 31-90 (RC-306, RC
3) 1,250ml P:CLP:IAL Hetals, lig, T 1,250ml G:VOA CLP 1,250ml G:Anions F,Cl,504 (EPA 1,125ml G:Cyanide CLP	06, MA-22 (RC-30), 10t3t Oranium (EA-010) P 5) Pu-238, Pu-239/240 (EF-30, EF-81, EF- 09 (RC-24, RC-604) Am-241, Em-244 (EF-80) i A 300.0) 353.2) P-10), Gamma Spec to include, Cs-134, Cs-1	37, Co-60, Eu-152
3) 1,250ml P:CLP; TAL Hetals, Hg, T 1,250ml Gs:VOA CLP 1,250ml aG:Semi-VOA CLP 1,125ml G:Anions F,Cl, SO4 (EPA 1,125ml G:Cyanide CLP 1,1000ml P/G:Gross alpha/beta (EEu-154,Eu-155,K-40,Ru-1	1	37, Co-60, EU-152, U-236 (EP-70, EP-71, EP-5) Np-
3) 1,250ml P:CLP; IAL Hetals, lig, I 1,250ml Gs: VOA CLP 1,250ml aG: Semi-VOA CLP 1,125ml G: Anions F, Cl, SO4 (EPA 1,125ml G: Cyanide CLP 1,125ml G: Gyanide CLP 1,125ml G: Gyanide CLP 1,125ml G: Cyanide C	1 A 300.0) P-10), Gamma Spec to include, Cs-134, Cs-1 06, Na-22 (RC-30), Total Uranium (EA-01C) P-10), Gamma Spec to include (ER-10C) P-10), Gamma Spec to include (ER-10C) P-100, Na-22 (RC-30), Total Uranium (EA-01C) P-100, P-100, ER-10C, ER-10C, ER-10C, ER-10C)	37, Co-60, Eu-152
3) 1,250ml P:CLP; IAL Hetals, lig, I 1,250ml Gs: VOA CLP 1,250ml aG: Semi-VOA CLP 1,125ml G: Anions F, Cl, SO4 (EPA 1,125ml G: Cyanide CLP 1,125ml G: Gyanide CLP 1,125ml G: Gyanide CLP 1,125ml G: Cyanide C	1 A 300.0) P-10), Gamma Spec to include, Cs-134, Cs-1 06, Na-22 (RC-30), Total Uranium (EA-01C) P-10), Gamma Spec to include (ER-10C) P-10), Gamma Spec to include (ER-10C) P-100, Na-22 (RC-30), Total Uranium (EA-01C) P-100, P-100, ER-10C, ER-10C, ER-10C, ER-10C)	37, Co-60, Eu-152, U-235, U-235, U-235, U-235, U-236, RC-506,
3) 1,250ml P:CLP:IAL Hetals, IIg, I 1,250ml G:Semi-VOA CLP 1,250ml G:Semi-VOA CLP 1,125ml G:Anions F,Cl, SO4 (EPA 1,125ml G:Cyanide CLP 2,125ml G:Cyanide CLP 1,25ml G:Cyanide CLP 1,25ml G:Cyanide CLP 1,25ml G:Cyanide CLP 2,125ml G:Cyanide CLP 1,25ml G:Cyanide CLP 1,25ml G:Cyanide CLP 2,25ml G:Cyanide CLP 1,25ml G:Cya	1 A 300.0) 7-5) Pu-238, Pu-239/240 (EP-30, EP-81, EP-91,	37, Co-60, Eu-152, U-235, U-235, U-235, U-235, U-236, RC-506,
3) 1.250ml P:CLP:IAL Hetals, Ilg, I 1.250ml Gs:VOA CLP 1.250ml Gs:Semi-VOA CLP 1.125ml G:Anions F,Cl, SO4 (EPA 1.125ml G:Anions HOZ, NO3 (EPA 1.125ml Gu:Kerosene (8015H) 1.1000ml P/G:Gross alpha/beta (EEu-154, Eu-155, K-40, Ru-162, Eu-154, Eu-159, RC-304) Ice [] Field Transfer of Custody	1 A 300.0) 353.2) P-10), Gamma Spec to include, Cs-134, Cs-1 06, Na-22 (RC-30), Total Uranium (EA-01C) P-5) Pu-238, Pu-239/240 (EP-80, EP-81, EP- 06, Na-22 (RC-30), Total Uranium (EA-01C) P-5) Pu-238, Pu-239/240 (EP-80, EP-81, EP- 99 (RC-24, RC-604) Am-241, Cm-244 (EP-80) Chain of Possession	37, Co-60, EU-152, U-235, U-235, U-235, U-235, U-235, U-236, RC-505, RC-506, RC-506, EU-152, U-235, U-235, U-236, U-236, RC-506, RC-50
3) 1,250ml P:CLP; IAL Hetals, lig, I 1,250ml Gs: VOA CLP 1,250ml aG: Semi-VOA CLP 1,250ml aG: Semi-VOA CLP 1,125ml G: Anions F, Cl, SO4 (EPA 1,125ml G: Cyanide CLP 1,1000ml P/G: Gross alpha/beta (E Eu-154, Eu-155, K-40, Ru-1 237, (RC-101A, RC-622, E 303, RC-309, RC-304) 1c [] Field Transfer of Custody Relipquished by: (040)	1 A 300.0) 353.2) P-10), Gamma Spec to include, Cs-134, Cs-1 06, Na-22 (RC-30), Total Uranium (EA-01C) P-5) Pu-238, Pu-239/240 (EP-80, EP-81, EP- 06, Na-22 (RC-30), Total Uranium (EA-01C) P-5) Pu-238, Pu-239/240 (EP-80, EP-81, EP- 99 (RC-24, RC-604) Am-241, Cm-244 (EP-80 Chain of Possession Received by: 109/3/19/24/24 Received by: 109/3/19/3/24/24	37, Co-60, EU-152 U-235, U-234, U-238 (EP-70, EP-71, EP-5) Np- -5) I-129 (RC-25, RC-605) Sr-90 (RC-306, RC EP-90, EP-91, EP-92, EP-93, EP-5) Se-72 (Sign and Print Names
3) 1,250ml P:CLP:IAL Hetals, llg, I 1,250ml Gs:VOA CLP 1,250ml Gs:NoA CLP 1,250ml Gs:NoA CLP 1,125ml G:Anions F,Cl, SO4 (EPA 1,125ml G:Cyanide CLP 1,125ml G:Cyanide CLP 1,125ml Gw:Kerosene (8015H) 1,1000ml P/G:Gross alpha/beta (EEu-154,Eu-155,K-40,Ru-1237, (RC-101A, RC-622, EEu-154,Eu-155,K-40,Ru-1237, (RC-101A, RC-622, EEu-154,Eu-155,K-40,Ru-1237, (RC-101A, RC-622, EEu-154,Eu-155,K-40,Ru-1237, (RC-101A, RC-622, EEu-154,Eu-155,K-40,Ru-1237,Ru-101A,Ru-622, EEu-154,Eu-155,K-40,Ru-1237,Ru-101A,Ru-622,EEu-154,Eu-155,K-40,Ru-1237,Ru-101A,Ru-622,EEu-154,Eu-155,K-40,Ru-1237,Ru-101A,Ru-622,EEu-155,K-40,Ru-1237,Ru-134,Eu-155,K-40,Ru-1237,Ru-134,Eu-155,K-40,Ru-1237,Ru-134,Eu-155,K-40,Ru-134,Eu-155,Eu-155,K-40,Ru-134,Eu-155,Eu-155,Eu-155,Eu-155,Eu-155,Eu-155,Eu-155,Eu-155,	1 A 300.0) 353.2) P-10), Gamma Spec to include, Cs-134, Cs-1 06, Na-22 (RC-30), Total Uranium (EA-01C) P-5) Pu-238, Pu-239/240 (EP-80, EP-81,	37, Co-60, EU-152 U-235, U-234, U-238 (EP-70, EP-71, EP-5) Np- -5) I-129 (RC-25, RC-605) Sr-90 (RC-306, RC EP-90, EP-91, EP-92, EP-93, EP-5) Se-72 (Sign and Print Names
1,250ml P:CLP:IAL Hetals, Ilg, I 1,250ml P:CLP:IAL Hetals, Ilg, I 1,250ml Gs:VOA CLP 1,250ml Gs:VOA CLP 1,250ml Gs:Anions F.Cl, SO4 (EPA 1,125ml G:Cyanide CLP 1,25ml G:Cyanide CLP 1,125ml G:Cyanide CLP 1	1 A 300.0) 353.2) P-10), Gamma Spec to include, Cs-134, Cs-1 06, Na-22 (RC-30), Total Uranium (EA-01C) P-5) Pu-238, Pu-239/240 (EP-80, EP-81, EP- 06, Na-22 (RC-30), Total Uranium (EA-01C) P-5) Pu-238, Pu-239/240 (EP-80, EP-81, EP- 99 (RC-24, RC-604) Am-241, Cm-244 (EP-80 Chain of Possession Received by: 109/11/5/14/2	37, Co-60, EU-152 U-235, U-234, U-238 (EP-ZD EP-71, EP-5) Np- -5) I-129 (RC-25, RC-605) Sr-90 (RC-306, RC EP-90, EP-91, EP-92, EP-93, EP-5) Sr-70 (Sign and Print Names) Date/Time: 1040 Date/Time:
3) 1,250ml P:CLP:IAL Hetals, lig, I 1,250ml Gs:VOA CLP 1,250ml aG:Semi-VOA CLP 1,250ml aG:Semi-VOA CLP 1,125ml G:Anions Ho2, No3 (EPA 1,125ml G:Cyanide CLP 1,125ml G:Cyanide CL	06, MA-22 (RC-30), Total Grantum (EA-01C) P-5) Pu-238, Pu-257/240 (EF-30, EF-81, EF- 09 (RC-24, 2C-604) Am-241, Em-244 (EF-30) I A 300.0) 353.2) P-10), Gamma Spec to include, Cs-134, Cs-1 06, Na-22 (RC-30), Total Uranium (EA-01C) P-5) Pu-238, Pu-239/240 (EP-80, EP-81, EP-99 (RC-24, RC-604) Am-241, Cm-244 (EP-80) Chain of Possession Received by: Am-241, Cm-244 (EP-80) Received by: Am-241, Cm-244 (EP-80) Received by: Am-241, Cm-244 (EP-80)	37, Co-60, EU-152 87-70, EV-71, EV-72, EV-73, EV-73
3) 1,250ml P:CLP; TAL Hetals, lig, T 1,250ml Gs: VOA CLP 1,250ml Gs: NOA CLP 1,250ml Gs: NOA CLP 1,125ml G: Anions F, Cl, SO4 (EPA 1,125ml G: Anions NO2, NO3 (EPA 1,125ml G: Cyanide CLP 1,125ml Gu: Kerosene (8015H) 1,1000ml P/G: Gross alpha/beta (E Eu-154, Eu-155, K-40, Ru-1 237, (RC-101A, RC-622, E 303, RC-309, RC-304) Ic [] Field Transfer of Custody Relinquished Ov: (040 Relinquished by Cart Signals Relinquished by Gross Signals Relinquished Description of Signals Rel	1 A 300.0) 353.2) P-10), Gamma Spec to include, Cs-134, Cs-1 06, Na-22 (RC-30), Total Uranium (EA-01C) P-5) Pu-238, Pu-239/240 (EP-80, EP-81, EP- 06, Na-22 (RC-30), Total Uranium (EA-01C) P-5) Pu-238, Pu-239/240 (EP-80, EP-81, EP- 99 (RC-24, RC-604) Am-241, Cm-244 (EP-80 Chain of Possession Received by: // 5/1/ 5/1/ Received by: // // // // // // // // // // // // //	37, Co-60, EU-152, RC 605) 31-90 (RC 306, RC 80-70, EP-71, EP-71, EP-5) Np-92, U-235, U-236, U-238 (EP-70, EP-71, EP-5) Np-5) I-129 (RC-25, RC-605) Sr-90 (RC-306, RC EP-90, EP-91, EP-92, EP-93, EP-5) Se-72 (Sign and Print Names) Date/Time: 1040 F-10-93 Date/Time: 9-14-93 Date/Time:
3) 1,250ml P:CLP:IAL Hetals, lig, I 1,250ml Gs:VOA CLP 1,250ml aG:Semi-VOA CLP 1,250ml aG:Semi-VOA CLP 1,125ml G:Anions Ho2, No3 (EPA 1,125ml G:Cyanide CLP 1,125ml G:Cyanide CL	06, MA-22 (RC-30), lotal Granium (EA-01C) P-5) Pu-238, Pu-257/240 (EF-30, EF-81, EF- 09 (RC-24, 2C-604) Am-241, Em-244 (EF-30) I A 300.0) 353.2) P-10), Gamma Spec to include, Cs-134, Cs-1 06, Ma-22 (RC-30), Total Uranium (EA-01C) P-5) Pu-238, Pu-239/240 (EP-80, EP-81, EP-99 (RC-24, RC-604) Am-241, Cm-244 (EP-80) Chain of Possession Received by: Received by: Received by: Received by:	37, Co-60, EU-152 87-70, EV-71, EV-72, EV-73, EV-73
3) 1,250ml P:CLP:IAL Hetals, lig, I 1,250ml Gs:VOA CLP 1,250ml aG:Semi-VOA CLP 1,250ml aG:Semi-VOA CLP 1,125ml G:Anions Ho2, No3 (EPA 1,125ml G:Cyanide CLP 1,125ml G:Cyanide CL	06, MA-22 (RC-30), Total Grantum (EA-01C) P-5) Pu-238, Pu-257/240 (EF-30, EF-81, EF- 09 (RC-24, 2C-604) Am-241, Em-244 (EF-30) I A 300.0) 353.2) P-10), Gamma Spec to include, Cs-134, Cs-1 06, Na-22 (RC-30), Total Uranium (EA-01C) P-5) Pu-238, Pu-239/240 (EP-80, EP-81, EP-99 (RC-24, RC-604) Am-241, Cm-244 (EP-80) Chain of Possession Received by: Am-241, Cm-244 (EP-80) Received by: Am-241, Cm-244 (EP-80) Received by: Am-241, Cm-244 (EP-80)	37, Co-60, EU-152 87-70, EV-71, EV-72, EV-73, EV-73

DOODCAC

Westinghouse Hanford Company

CHAIN OF CUSTODY

Custody Form Initiator L E ROGER	S	*41 *** *** **** ****
Company Contact L E ROGERS	· Tele	phone 376-7690
Project Designation/Sampling Locations		ection Date <u>9-10-93</u>
Ice Chest No SML 366	Fiel	d Logbook No. EFL-1091
Bill of Lading/Airbill No.	offs	ite Property No.
Hethod of Shipment OVERNIGHT AIR	SERVICE	
shipped to TMA	•	
Possible Sample Hazards/Remarks Keep	samples at 4C (SOIL) NONE	DETECTED
	Sample Identification	
Eu-154, Eu-155, K-40, Ru-10 237, (RC-101A, RC-622, El 303, RC-309, RC-304) Te 303, RC-309, RC-304) Te 303, RC-309, RC-304) Te 303, RC-309, RC-304) Te 304, Z50ml P:CLP; TAL Hetals, lig, T Gs:VOA CLP 4, Z50ml ag:Semi-VOA CLP	7 300.0) 353.2) P-10), Gamman Spec to include, Cs-134, Cs-137 06, Na-22 (RC-30), Total Uranium (EA-01C) Ur-5) ru-238, ru-239/240 (EP-80, EP-81, EP-5-99 (RC-24, RC-604) Am-241, Cm-244 (EP-80, IR-80,	J-235,U-234,U-238 (EP-70, EP-71, EP-5) Hp- i) I-129 (RC-25, RC-605) Sr-90 (RC-306, RC-
-10-93-1, 125ml G:Cynnide CLP -1, 125ml GH:Kerosene (8015M) -1, 1000ml P/G:Gross alpha/beta (E Eu-154, Eu-155, K-40, Ru-1 237, (RC-101A, RC-622, E	353.2) P-10), Gamma Spec to include,Cs-134,Cs-137 06,Na-22 (RC-30), Total Uranium (EA-01C) l	J-235,U-234,U-238 (EP-70, EP-71, EP-5) Np- 5) I-129 (RC-25, RC-605) Sr-90 (RC-306, RC-
1,125ml P/G:Anions NO2,NO3 (EPA G:Cyanide CLP G:Kerosene (8015M) 1,1000ml P/G:Gross alpha/beta (EEu-154,Eu-155,K-40,Ru-1237,(RC-101A, RC-622, E 303, RC-309, RC-304) To 1,250ml P:CLP:IAL Metals, Ng, T 1,250ml G:S:VOA CLP G:S:VOA CLP 1,125ml G:Anions F,Cl,SO4 (EPA 1,125ml G:Cyanide CLP 1,125ml G:Cyanide CLP 1,125ml G:Cyanide CLP 1,125ml G:Cyanide CLP 1,125ml G:Gross alpha/beta (EEu-154,Eu-155,K-40,Ru-1237,(RC-101A, RC-622, EEu-154,Eu-155,K-40,Ru-1237,(RC-101A, RC-622, EEU-144,EU-144	353.2) P-10), Gamma Spec to include, Cs-134, Cs-137 06, Na-22 (RC-30), Total Uranium (EA-01C) UP-5) PU-238, PU-239/240 (EP-80, EP-81, EP-9) (RC-24, RC-604) Am-241, Cm-244 (EP-80, IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	J-235,U-234,U-238 (EP-70, EP-71, EP-5) Np- 5) I-129 (RC-25, RC-605) sr-90 (RC-306, RC- EP-90, EP-91, EP-92, EP-93, EP-5) Se-79 7,Co-60,EU-152, U-235,U-234,U-238 (EP-70, EP-71, EP-5) Np- 5) I-129 (RC-25, RC-605) sr-90 (RC-306, RC-
7.125ml P/G:Anions NO2, NO3 (EPA G:Cyanide CLP G:Kerosene (8015M) 7.125ml Gw:Kerosene (8015M) 7.1000ml P/G:Gross alpha/beta (EEu-154, Eu-155, K-40, Ru-1237, (RC-101A, RC-622, E303, RC-309, RC-304) To 7.250ml P:CLP: IAL Metals, Ng, T1, 250ml G:Semi-VOA CLP G:Anions F, Cl, S04 (EPA 1, 125ml P/G:Anions NO2, NO3 (EPA 1, 125ml G:Cyanide CLP 1, 125ml G:Cyanide CLP 1, 125ml G:Gross alpha/beta (EU-154, Eu-155, K-40, Ru-1237, (RC-101A, RC-622, EU-154, EU-155, EU-154, EU-154, EU-155, EU-154, EU-154, EU-154, EU-155, EU-154, EU-154, EU-155, EU-154, EU-155, EU-154, EU-155, EU-154, EU-155, EU-154, EU-154, EU-155, EU-154, EU-155, EU-155, EU-154, EU-155, EU-155, EU-154, EU-155, EU-1	353.2) P-10), Gamma Spec to include, Cs-134, Cs-137 06, Na-22 (RC-30), Total Uranium (EA-01C) to P-5) Pu-238, Pu-239/240 (EP-80, EP-81, EP-8-99 (RC-24, RC-604) Am-241, Cm-244 (EP-80, include)	J-235,U-234,U-238 (EP-70, EP-71, EP-5) Np- 5) I-129 (RC-25, RC-605) sr-90 (RC-306, RC- EP-90, EP-91, EP-92, EP-93, EP-5) Se-79 7,Co-60,EU-152, U-235,U-234,U-238 (EP-70, EP-71, EP-5) Np- 5) I-129 (RC-25, RC-605) sr-90 (RC-306, RC-
1,125mt P/G:Anions NO2,NO3 (EPA G:Cyanide CLP GW:Kerosene (8015M) 1,1000mt P/G:Gross alpha/beta (EEu-154,Eu-155,K-40,Ru-1237,(RC-101A, RC-622, E303, RC-309, RC-304) To 1,250mt P:CLP;IAL Metals,lig, T1,250mt Gs:VOA CLP G:Cyanide CLP 1,125mt G:Anions F,Cl,SO4 (EPA 1,125mt G:Cyanide CLP	353.2) P-10), Gamma Spec to include, Cs-134, Cs-137 06, Na-22 (RC-30), Total Uranium (EA-01C) to P-5) Pu-238, Pu-239/240 (EP-80, EP-81, EP-5)-99 (RC-24, RC-604) Am-241, Cm-244 (EP-80, and an arrangement of the state of the st	J-235,U-234,U-238 (EP-70, EP-71, EP-5) Np- 5) I-129 (RC-25, RC-605) Sr-90 (RC-306, RC- EP-90, EP-91, EP-92, EP-93, EP-5) Se-79 7,Co-60,EU-152, U-235,U-234,U-238 (EP-70, EP-71, EP-5) Np- 5) I-129 (RC-25, RC-605) Sr-90 (RC-306, RC- EP-90, EP-91, EP-92, EP-93, EP-5) Se-79
7,125ml P/G:Anions NO2, NO3 (EPA G:Cyanide CLP Gw:Kerosene (8015M) 1,1000ml P/G:Gross alpha/beta (EEu-154, Eu-155, K-40, Ru-1237, (RC-101A, RC-622, E303, RC-309, RC-304) To 1,250ml P:CLP; IAL Metals, Ng, T1,250ml Gs:VOA CLP G:Anions F, Cl, SO4 (EPA 1,125ml G:Anions HO2, NO3 (EPA 1,125ml G:Cyanide CLP 1,125ml Gw:Kerosene (8015M) 1,1000ml P/G:Gross alpha/beta (EEu-154, Eu-155, K-40, Ru-1237, (RC-101A, RC-622, E303, RC-309, RC-304) To [] Field Transfer of Custody	353.2) P-10), Gamma Spec to include, Cs-134, Cs-137 06, Na-22 (RC-30), Total Uranium (EA-01C) to P-5) Pu-238, Pu-239/240 (EP-80, EP-81, EP-8-99 (RC-24, RC-604) Am-241, Cm-244 (EP-80, Include, Cs-134, Cs-133) A 300.0) P-10), Gamma Spec to include, Cs-134, Cs-13306, Na-22 (RC-30), Total Uranium (EA-01C) to P-5) Pu-238, Pu-239/240 (EP-80, EP-81, EP-199 (RC-24, RC-604) Am-241, Cm-244 (EP-80, Chain of Possession Received by: Part Special Part Part Special Part Part Special Part Part Part Part Part Part Part Part	J-235,U-234,U-238 (EP-70, EP-71, EP-5) Np- 5) I-129 (RC-25, RC-605) sr-90 (RC-306, RC- EP-90, EP-91, EP-92, EP-93, EP-5) Se-79 7,Co-60,EU-152, U-235,U-234,U-238 (EP-70, EP-71, EP-5) Np- 5) I-129 (RC-25, RC-605) sr-90 (RC-306, RC- EP-90, EP-91, EP-92, EP-93, EP-5) Se-79 (Sign and Print Names)
1,125ml P/G:Anions NO2, NO3 (EPA G:Cyanide CLP GW:Kerosene (8015M) 1,1000ml P/G:Gross alpha/beta (EEu-154, Eu-155, K-40, Ru-1237, (RC-101A, RC-622, E303, RC-309, RC-304) To 1,250ml P:CLP; IAL Metals, lig, T1,250ml Gs:VOA CLP 1,125ml G:Cyanide CLP 1,125ml G:Anions NO2, NO3 (EPA 1,125ml G:Cyanide CLP 1,125ml Gw:Kerosene (8015M) 1,1000ml P/G:Gross alpha/beta (EEu-154, Eu-155, K-40, Ru-1237, (RC-101A, RC-622, E303, RC-309, RC-304) To Field Transfer of Custody Relinquished by: NO - Sichling Relinquished By: NO - Sichli	353.2) P-10), Gamma Spec to include, Cs-134, Cs-137 06, Na-22 (RC-30), Total Uranium (EA-01C) (P-5) PU-238, PU-239/240 (EP-80, EP-81, EP-99 (RC-24, RC-604) Am-241, Cm-244 (EP-80, Include, Cs-134, Cs-134) A 300.0) P-10), Gamma Spec to include, Cs-134, Cs-136 06, Na-22 (RC-30), Total Uranium (EA-01C) (P-5) PU-238, PU-239/240 (EP-80, EP-81, EP-99 (RC-24, RC-604) Am-241, Cm-244 (EP-80, Chain of Possession Received by: Pull Special Company (RC-24, RC-604) Am-241, Cm-244 (EP-80, Chain of Possession	J-235,U-234,U-238 (EP-70, EP-71, EP-5) Np- 5) I-129 (RC-25, RC-605) sr-90 (RC-306, RC- EP-90, EP-91, EP-92, EP-93, EP-5) se-79 7,Co-60,Eu-152, U-235,U-234,U-238 (EP-70, EP-71, EP-5) Np- 5) I-129 (RC-25, RC-605) sr-90 (RC-306, RC- EP-90, EP-91, EP-92, EP-93, EP-5) Se-79 (Sign and Print Names) Date/Time: 4-10-4-3 1040 Date/Time:
1,125ml P/G:Anions NO2, NO3 (EPA G:Cyanide CLP GH:Kerosene (8015M) 1,1000ml P/G:Gross alpha/beta (EEu-154, Eu-155, K-40, Ru-1237, (RC-101A, RC-622, EEu-154, Eu-155, K-40, Ru-1237, (RC-101A, RC-622, EEu-155) 1,250ml P:CLP; IAL Metals, Nog, Tolonom General Gener	353.2) P-10), Gamma Spec to include, Cs-134, Cs-137 06, Na-22 (RC-30), Total Uranium (EA-01C) (P-5) Pu-238, Pu-239/240 (EP-80, EP-81, EP-5) -99 (RC-24, RC-604) Am-241, Cm-244 (EP-80, M-241, Cm-244) A 300.0) 353.2) P-10), Gamma Spec to include, Cs-134, Cs-137 06, Na-22 (RC-30), Total Uranium (EA-01C) (P-5) Pu-238, Pu-239/240 (EP-80, EP-81, EP-99) (RC-24, RC-604) Am-241, Cm-244 (EP-30, Chain of Possession Received by: Pull Accus	J-235,U-234,U-238 (EP-70, EP-71, EP-5) Np- 5) I-129 (RC-25, RC-605) sr-90 (RC-306, RC- EP-90, EP-91, EP-92, EP-93, EP-5) Se-79 7,Co-60,EU-152, U-235,U-234,U-238 (EP-70, EP-71, EP-5) Np- 5) I-129 (RC-25, RC-605) sr-90 (RC-306, RC- EP-90, EP-91, EP-92, EP-93, EP-5) Se-79 (Sign and Print Names) Date/Time: 4-10-4-3 1040
1,125ml P/G:Anions NO2, NO3 (EPA G:Cyanide CLP GW:Kerosene (8015M) 1,1000ml P/G:Gross alpha/beta (EEu-154, Eu-155, K-40, Ru-1237, (RC-101A, RC-622, E303, RC-309, RC-304) To 1,250ml P:CLP; IAL Metals, Ng, T1,250ml Gs:VOA CLP 1,250ml G:Cyanide CLP 1,125ml G:Anions F,Cl, SO4 (EPA 1,125ml G:Cyanide CLP 1,125ml Gw:Kerosene (8015M) 1,1000ml P/G:Gross alpha/beta (EEu-154, Eu-155, K-40, Ru-1237, (RC-101A, RC-622, E303, RC-309, RC-304) To Field Transfer of Custody Relinquished by: 1000 9	353.2) P-10), Gamma Spec to include, Cs-134, Cs-137 06, Na-22 (RC-30), Total Uranium (EA-01C) (P-5) Pu-238, Pu-239/240 (EP-80, EP-81, EP-5) -99 (RC-24, RC-604) Am-241, Cm-244 (EP-80, M-241, Cm-244) A 300.0) 353.2) P-10), Gamma Spec to include, Cs-134, Cs-137 06, Na-22 (RC-30), Total Uranium (EA-01C) (P-5) Pu-238, Pu-239/240 (EP-80, EP-81, EP-99) (RC-24, RC-604) Am-241, Cm-244 (EP-30, Chain of Possession Received by: Pull Accus	J-235,U-234,U-238 (EP-70, EP-71, EP-5) Np-5) I-129 (RC-25, RC-605) sr-90 (RC-306, RC-EP-90, EP-91, EP-92, EP-93, EP-5) se-79 7,Co-60,EU-152, U-235,U-234,U-238 (EP-70, EP-71, EP-5) Np-5) I-129 (RC-25, RC-605) sr-90 (RC-306, RC-EP-90, EP-91, EP-92, EP-93, EP-5) Se-79 (Sign and Print Names) Date/Time: 9-10-9-3 1040 Date/Time:
1.125ml P/G:Anions NO2, NO3 (EPA G:Cyanide CLP Gw:Kerosene (8015M) 1.1000ml P/G:Gross alpha/beta (E Eu-154, Eu-155, K-40, Ru-1 237, (RC-101A, RC-622, E 303, RC-309, RC-304) To 1.250ml P:CLP; IAL Metals, lig, T 1,250ml Gs:VOA CLP G:Cyanide CLP 1,125ml G:Anions NO2, NO3 (EPA 1,125ml G:Anions NO2, NO3 (EPA 1,125ml G:Cyanide CLP 1,125ml Gw:Kerosene (8015M) 1.1000ml P/G:Gross alpha/beta (E Eu-154, Eu-155, K-40, Ru-1 237, (RC-101A, RC-622, E 303, RC-309, RC-304) To Relinquished by: Volume Gross of Custody Relinquished by: Volume Gross of Custody Relinquished by: Volume Gross of Custody	353.2) P-10), Gamma Spec to include, Cs-134, Cs-137 06, Na-22 (RC-30), Total Uranium (EA-01C) (P-5) Pu-238, Pu-239/240 (EP-80, EP-81, EP-5) -99 (RC-24, RC-604) Am-241, Cm-244 (EP-80, Mar. 241, Cm-244 (EP-80, Chain of Possession Received by:	J-235, U-234, U-238 (EP-70, EP-71, EP-5) Np- 5) I-129 (RC-25, RC-605) sr-90 (RC-306, RC- EP-90, EP-91, EP-92, EP-93, EP-5) Se-79 7, Co-60, Eu-152, U-235, U-234, U-238 (EP-70, EP-71, EP-5) Np- 5) I-129 (RC-25, RC-605) Sr-90 (RC-306, RC- EP-90, EP-91, EP-92, EP-93, EP-5) Se-79 (Sign and Print Names) Date/Time: 9-10-93 1040 Date/Time: 9-14-93 10:50
1,125ml P/G:Anions NO2, NO3 (EPA G:Cyanide CLP GW:Kerosene (8015M) 1,1000ml P/G:Gross alpha/beta (EEu-154, Eu-155, K-40, Ru-1237, (RC-101A, RC-622, E303, RC-309, RC-304) To 1,250ml P:CLP; IAL Metals, Ng, T1,250ml Gs:VOA CLP 1,250ml Gs:VOA CLP 1,125ml G:Anions NO2, NO3 (EPA 1,125ml G:Anions NO2, NO3 (EPA 1,125ml G:Cyanide CLP 1,125ml Gw:Kerosene (8015M) 1,1000ml P/G:Gross alpha/beta (EEu-154, Eu-155, K-40, Ru-1237, (RC-101A, RC-622, E303, RC-309, RC-304) To Field Transfer of Custody Relinquished by: Relinquished by: Relinquished by:	353.2) P-10), Gamma Spec to include, Cs-134, Cs-137 06, Na-22 (RC-30), Total Uranium (EA-01C) (P-5) Pu-238, Pu-239/240 (EP-80, EP-81, EP-5) -99 (RC-24, RC-604) Am-241, Cm-244 (EP-80, Man-24), Cm-244 (EP-80, Chain of Possession Received by:	J-235,U-234,U-238 (EP-70, EP-71, EP-5) Mp- (Co-25, RC-605) Sr-90 (RC-306, RC- EP-90, EP-91, EP-92, EP-93, EP-5) Se-79 7,Co-60,EU-152, U-235,U-234,U-238 (EP-70, EP-71, EP-5) Mp- (Sign and Print Names) Date/Time: 9-19-93 1040 Date/Time: 9-19-93 1040 Date/Time:
1,125ml P/G:Anions NO2, NO3 (EPA G:Cyanide CLP GW:Kerosene (8015M) 1,1000ml P/G:Gross alpha/beta (E Eu-154, Eu-155, K-40, Ru-1 237, (RC-101A, RC-622, E 303, RC-309, RC-304) To 1,250ml P:CLP: IAL Metals, lig, T 1,250ml Gs:VOA CLP Gs:VOA CLP 1,125ml G:Anions NO2, NO3 (EPA 1,125ml G:Anions NO2, NO3 (EPA 1,125ml G:Cyanide CLP 1,125ml Gw:Kerosene (8015M) 1,1000ml P/G:Gross alpha/beta (E Eu-154, Eu-155, K-40, Ru-1 237, (RC-101A, RC-622, E 303, RC-309, RC-304) To Field Transfer of Custody Relinquished by: 1000	353.2) P-10), Gamma Spec to include, Cs-134, Cs-137 06, Na-22 (RC-30), Total Uranium (EA-01C) (P-5) Pu-238, Pu-239/240 (EP-80, EP-81, EP-5) -99 (RC-24, RC-604) Am-241, Cm-244 (EP-80, Mar. 241, Cm-244 (EP-80, Chain of Possession Received by:	J-235,U-234,U-238 (EP-70, EP-71, EP-5) Mp- (Co-25, RC-605) Sr-90 (RC-306, RC- EP-90, EP-91, EP-92, EP-93, EP-5) Se-79 7,Co-60,EU-152, U-235,U-234,U-238 (EP-70, EP-71, EP-5) Mp- (Sign and Print Names) Date/Time: 9-19-93 1040 Date/Time: 9-19-93 1040 Date/Time:

ATTACHMENT 5 DATA VALIDATION SUPPORTING DOCUMENTATION

WHC-SD-EN-SPP-002, Rev. 2

GC/MS ORGANIC DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	В	С	D	E
PROJECT: 2	6-90-00		DATA PACKA	GE: 809332-	m4-611
VALIDATOR;	Delly	LAB: TOP	+	DATE: 03	2/94
CASE:			SDG: 859	332-Tm/A	118-
		ANALYSES	PERFORMED		
CLP Volatiles	SW-846 8240 (cap column)	SW-846 8260 (packed column)	CLP Semivolatiles	SW-846 8270 (cap column)	SW-846 (pecked column)
0			0	0	0
Is technical	KAGE COMPLETED verification rrative presen	documentatio	n present?	>	Yes No N/A
	TIMES olding times			(Yes No N/A

WHC-SD-EN-SPP-002, Rev. 2

GC/MS ORGANIC DATA VALIDATION CHECKLIST

3. INSTRUMENT TUNING AND CALIBRATION
Is the GC/MS tuning/performance check acceptable? (Yes) No N/A
Are initial calibrations acceptable? Yes No N/A
Are continuing calibrations acceptable?
Comments:
· · · · · · · · · · · · · · · · · · ·
·
4. BLANKS
Were laboratory blanks analyzed? Yes No N/A
Are laboratory blank results acceptable? Yes No N/A
Were field/trip blanks analyzed? Yes No N/A
Are field/trip blank results acceptable? Yes No N/A
comments: Actore and the Co were detected in
the accordabilities
Sample Br9335 : s a solid top Hack-all solul
are NOW HE exception of as TIC dentitied
5. ACCURACY our waterward hydrocartoon.
Were surrogates/System Monitoring Compounds analyzed? Yes No N/A
Are surrogate/System Monitoring Compound recoveries acceptable Yes No N/A
Were MS/MSD samples analyzed? Yes No N/A
Are MS/MSD results acceptable? Yes No N/A
Comments:
·

WHC-SD-EN-SPP-002, Rev. 2

GC/MS ORGANIC DATA VALIDATION CHECKLIST

6. PRECISION	
Are MS/MSD RPD values acceptable? Yes No	N/A
Are field duplicate RPD values acceptable? Yes No	N/A
Are field split RPD values acceptable? Yes No	N/A
Comments:	
7. SYSTEM PERFORMANCE	
Were internal standards analyzed? Yes No	N/A
Are internal standard areas acceptable? Yes No	N/A
Are internal standard retention times acceptable? Yes No	N/A
Comments:	
8. COMPOUND IDENTIFICATION AND QUANTITATION	
Is compound identification acceptable? Yes No	,
Is compound quantitation acceptable? Yes No	N/A
Comments:	
· · · · · · · · · · · · · · · · · · ·	
·	
9. REPORTED RESULTS AND QUANTITATION LIMITS	
Are results reported for all requested analyses? Yes No	N/A
Are all results supported in the raw data? Yes No	N/A
Do results meet the CRQLs?	N/A
Has the laboratory properly identified and coded all TIC? Yes No	N/A
Comments:	
·	
· ·	

HOLDING TIME SUMMARY

SDG:		VALIDATOR:	Miller	4	DATE: 3/2/4	P/	IGE OF
COMMENTS: 1	latile.	Depar	201				
FIELD SAMPLE		DATE SAMPLED	DATE PREPARED	DATE ANALYZED	PREP. HOLDING TIME, DAYS	ANALYSIS HOLDING TIME, DAYS	QUALIFIER
658902	and.	ज्यान्त्रावड		9/15/93		17	News
359333		09/10/93				6	
3-51385		09/09/93				7	
359336	D	capolas		1		6	1
						·	
		1					

CAS NO. COMPOUND

EPA SAMPLE NO.

		648		
VOLATILE	ORGANICS	ANALYSIS	DATA	SHEET

VBLK0916R Contract: WHC Lab Name: TMA/ARLI Lab Code: TMALA Case No.: 09028 SAS No.: NA SDG No.: NA Lab Sample ID: SBLK0916 Matrix: (soil/water) SOIL Lab File ID: 30916R03 Date Received: Level: (low/med) LOW_ % Moisture: not dec. ____ Date Analyzed: 09/16/93 Dilution Factor: 1.0 GC Column: PACK ID: 2.00 (mm) Soil Aliquot Volume: ____(uL) Soil Extract Volume: ____ (uL)

> CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

74-87-3	Chloromethane	10	וט
	Bromomethane	10	U i
	Vinyl Chloride	10	ו ס
	Chloroethane	10	iu i
	Methylene Chloride	2	I Charles
	Acetone	3	10 110 30
	Carbon Disulfide	10	U
	l, l-Dichloroethene	10	U
	l, l-Dichloroethane	10	i u
	1,2-Dichloroethene (total)	10	U
	Chloroform	10	IU I
	1,2-Dichloroethane	10	U
	2-Butanone	10	U
	l,l,l-Trichloroethane	10	U
	Carbon Tetrachloride	10	U
	Bromodichloromethane	10	U
	1,2-Dichloropropane	10	ו ט
	cis-1,3-Dichloropropene	10	ו
79-01-6	Trichloroethene	10	ו טו
	Dibromochloromethane	10	וֹט וֹ
	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U .
	trans-1,3-Dichloropropene	10	U
	Bromoform	10	Ü
	4-Methyl-2-Pentanone	10	U
	2-Hexanone	10	וט
	Tetrachloroethene	10	Ü
	1,1,2,2-Tetrachloroethane	10	U
108-88-3		10	U
	Chlorobenzene	10	U
	Ethylbenzene	10	U
	Styrene	10	028
	Xylene (total)	10	10 1 020
1330-20-1	xyrene (cocar)	-	
			-

FORM I VOA